Policy, Planning, and Research

WORKING PAPERS

Women in Development

Population and Human Resources
Department
The World Bank
August 1989
WPS 269

Women in Development

Issues for Economic and Sector Analysis

Women in Development Division

Women respond well to incentives but in many parts of the developing world they are not equipped to respond: limited in human capital development, they also lack access to factor markets. Increasing their capacity to respond to incentives has major implications for the economy, population, and environment.

Policy, Planning, and Research

WORKING PAPERS

Women in Development

This set of recommendations on women in development highlights considerations and key findings that can be used to identify issues and develop action plans concerning women in economic and sector analysis and project design. Among those findings:

Women already contribute far more economically than is usually recognized. Women account for over half the food produced in the developing world and provide one-fourth of the developing world's industrial labor. Their contribution is undervalued partially because women's work often "does not count," and partly because of the nature of home-based work. Their productivity and capacity to work is often constrained by culture and tradition, which often keeps women homebound, while men go into the "outside" world.

Expanding women's economic choices — by improving technologies or increasing their options for cottage industry or outside work — can increase output and efficiency by enabling women to find their true comparative advantage. Improving women's education provides much the same economic return as improving men's education — and tends to lead to smaller, healthier families.

Women tend to be disproportionately represented among the poor, so economic adjustment programs should deliberately take into consideration women's special needs and constraints. For example, women often have trouble traveling far from home so they especially need local roads or paths, better water supplies, simple forms of transport — and informational infrastructure (such as radios) that facilitates education and training.

The same set of prices on agricultural products may have a different incentive effect on men and women — who have different degrees of control over income from different products. When women's productive capacity is seriously constrained, it is important not simply to "get the prices right" — to establish ppropriate incentives — but also to improve their capacity to respond, through investment programs and policy changes.

Labor markets are often segmented by gender, with women typically concentrated in fewer, more traditional, less remunerative lines of work. Investments in human capital for women have a high payoff — but women and girls often get less than men or boys, especially when the costs to families of education, training, health care, and even food are high.

Improving the education of women is probably the easiest program to target, but key health and family planning needs include stronger prenatal screening and care, help with delivery, improved family planning, and a reduction of anemia. The most effective measures for reducing birth rates include expanded earning opportunities and education for women, combined with family planning and health care.

Improving opportunities for women remains a sensitive topic — a leadership issue — in many places. Through policy dialogue and lending, institutions like the World Bank can help highlight the costs of neglecting women and the gains to development from more vigorous efforts to include them.

This paper is a product of the Women in Development Division, Population and Human Resources Department. Copies are available free from the World Bank, 1818 H Street NW, Washington DC 20433. Please contact Judy Lai, room S9-125, extension 33753 (95 pages with charts and tables).

TABLE OF CONTENTS

This paper was prepared by Barbara Herz, PHRWD; with contributions from Lynn Bennett, Consultant; Meera Chatterjee, Consultant; Paul Collier, Consultant; Eleanor Folta, Consultant; Nancy Gillespie, Consultant; David Grey, INUWS; Shahidur Khandker, PHRWD; John Kurrien, Consultant; Judith McGuire, PHRHN; Anthony Measham, PHRHN; Augusta Molnar, Consultant; Jennifer Mukolwe, Consultant; Barry Popkin, Consultant; Gotz Schreiber, PHRWD; and T. Paul Schultz, Consultant.

We appreciate comments received from many people and particularly thank Paul Isenman, Callisto Madavo, Hans Wyss, Joan Claffey, Susan Cochrane, Christiaan Grootaert, Ralph Harbison, John Hayward, Bernardo Kugler, Francis Lethem, Josette Murphy, John Peberdy, Loretta Schaeffer, Julian Schweitzer and Gerardo Sicat. Ann Hamilton, Director of PHR, provided guidance and support.

EXECUTIVE SUMMARY

i. This paper highlights key findings that Bank staff (or others involved in development programs) may use to start identifying issues and developing action plans concerning women in economic and sector analysis and in project design. The paper focuses on the majority of women who are poor, not the few who are rich. It emphasizes measures to include women in development that contribute to economic performance, poverty reduction, slower population growth, and other broad development objectives. These measures generally fall into two classes. Some (such as agricultural extension or credit for assetless women) equip women immediately to improve productivity and earning capacity. Others (such as schooling or health care) build the human capital that enables people in the longer run to break out of old molds and lead more productive and satisfying lives.

ii. "Women in development" (WID) is still a new field, its analytic base narrow. The impact of economic policies or programs on women -- indeed on anyone in particular -- is not always well understood, as economic research tends to focus on aggregated indicators such as GNP growth or per capita income. This paper is only a first step in identifying ways to improve women's opportunities. As experience accumulates and understanding improves, this paper will be refined. In the meantime, we know enough to outline key issues, based on the operational experience of the Bank and other agencies and on existing research. This paper aims primarily at World Bank country and sector economists, country officers, and others working at the country level. It raises key issues in several sectors and suggests promising approaches but does not provide detailed "how to" ideas. We plan to augment this paper with detailed sector-by-sector "how to" guidelines and examples of effective projects. (Guidelines on forestry are available. Guidelines on agricultural extension, credit, and education will be completed in FY90.)

iii. The implications of women's roles for Bank analysis and lending will be obvious in the human capital fields -- education and training; health and nutrition; and family planning. (In these fields, the evidence on potential benefits and promising approaches is generally strong.) Perhaps less obvious are the important implications of women's roles in poverty alleviation and development strategies addressing employment; agriculture and forestry; and household energy. (In these fields, the base of evidence is less extensive but growing, and the evidence that exists is promising.) Women's roles also indirectly affect infrastructure (water, roads, and transport). (In these fields, the evidence remains sketchy.) The implications of women's roles are more tenuous but not entirely absent in macro policy considerations -- monetary and fiscal, trade, privatization; and public sector management policies. Economic adjustment programs tend to affect the entire economy, so their impact on women can and should be considered. (In these fields the evidence remains limited as the impact on women has seldom been addressed, but several Bank surveys now under way will help.) The legal framework may be an important "enabling influence" on women, but its impact is not yet well studied. Finally, attention to women is crucial in analyzing the links between economic progress, population growth, and management of the environment. (In these fields, the evidence is already strong.)

iv. The main points raised in this paper are basic enough to apply broadly in most countries. But country circumstances vary, and development of practical country-specific plans usually requires a careful look at who the women are, what work they do, what constraints they face, and why. This process will suggest probable benefits from improving opportunities, particularly for poorer women, and practical approaches for doing so.

Assessing the Situation and Moving Ahead Operationally

v. Getting started. Some idea of the specific situation of women in the country concerned (and the underlying explanations) needs to be developed by gathering some basic gender-disaggregated data, reviewing the literature, and assessing program and project experience. In general, censuses, education and labor force data, and other readily available information can provide a clear enough overall picture, particularly when more detailed sample surveys and research on specific aspects of women's situation in the country or region can also be drawn upon. (Program and project reports tend to provide little gender-disaggregated information, but people involved with programs and projects can often give a reasonably detailed picture.) In short, do not wait for detailed statistical surveys or extensive further research before beginning to move along some of the fairly obvious lines outlined under the seven key points. The level of analysis typically employed in Bank sector work -- when it includes some gender-disaggregated data -- will usually suffice to clarify the role of women and identify (at least in rough terms) practical ways to improve women's opportunities. Of course, major operational efforts will profit from better analysis in this as in other fields -- but the basic point is to avoid letting the perfect be the enemy of the good. We know enough now to accomplish a good deal.

vi. Be selective. It is not necessary to wait until the capacity or the commitment exists to "do everything" -- beginning to address two or three related issues or sectors is often a useful way to start. It demonstrates the feasibility, acceptability, and benefits for development of efforts to include women. It also often builds the interest and confidence needed to initiate further efforts. It is often quite possible, for example, to make productive inputs and information more readily available to women farmers and entrepreneurs, to expand or improve education at the later primary and secondary levels, and to strengthen local maternal health and family planning services -- at modest cost but with considerable impact.

Three Primary Propositions

vii. Women already contribute far more economically than is usually recognized. FAO estimates that women account for over half the food produced in the developing world (for home use and increasingly for market). Food security, especially for the poor, depends heavily on the work of women. Women carry the main responsibility for child care and household chores, which would otherwise have to be paid for. Women constitute one-fourth of the developing world's industrial labor force and work in a number of emerging services and labor-intensive industries. But women's contribution is underestimated partly

because of the nature of home-based work. A price is not charged for it, so it is hard to value. It often leads to almost immediate consumption, so it may not be visible outside the home. The underestimation of women's contribution is also partly cultural -- women's work doesn't always "count," however vital it may be in daily life. But women's dominant role in some areas is well known. Women are known to be important to food production in Africa, for example, because they tend the fields. Even when they work in seclusion, however, women still often contribute substantially to food production or storage. (Their husbands, when asked, may not readily acknowledge it).

viii. The "inside/outside issue: Women's capacity to work is often particularly constrained -- their productivity reduced -- by culture and tradition, sometimes codified into law or policy. Culture and tradition vary but often confine women and girls inside the family or close to home, while men and boys are encouraged to move outside the home and beyond the traditional spheres of economic activity. Even for "inside" activities, women may have to rely on men to obtain some resources and information. This "inside/outside" dichotomy varies by culture, of course, but applies broadly in many situations. It tends to limit women's access to information and technology, education and training, credit and resources, and markets. Women are not "just poor." Gender-based difficulties leave many women at a disadvantage in the economy. Even where women bear most responsibility for food production, for example, agricultural extension services may be deliberately aimed primarily at men -- with the notion that men will pass information along to their wives. Credit may be provided only to borrowers who can pledge title to land or other assets as security, thus excluding women regardless of their ability to repay because men have title to almost all the land. And social expectations may discourage women from seeking education and training. Of course, the physical demands of childbearing and child care also make it harder for women and girls to seek education and training away from home, particularly when childbearing begins in the teenage years. As a result, women's productivity is frequently depressed well below potential levels -- and this carries a cost in economic inefficiency. Women are, in a sense, wasted. Women, like men, need education and resources to add value to their raw labor.

ix. Investing in women can be a cost-effective route to economic efficiency and other development objectives. Women are viewed too often as "targets" or "beneficiaries," and too rarely as effective "agents" or contributors. Yet the case for strengthening women's capacity to contribute is strong. Expanding women's choices in economic activity -- by improving technologies or increasing options for "inside" activities and by allowing more women to move "outside" -- can increase output and efficiency by enabling women to find their true comparative advantage, much as international trade can promote efficient specialization and thus economic expansion among nations. First, evidence suggests that women farm as well as men when given similar access to land, inputs, education, and training. Second, women's education produces much the same economic return as men's (as measured by the internal rate of return on investment in education approximated by proportional wage increases). It also opens up broader lines of work to women, as it does for men, in a range of industries and services. Third, women's education has demonstrably greater impact than men's education on children's health. Moreover, increasing women's income appears to improve women's bargaining position in the family. Women may be more inclined to spend income and resources to benefit the family, though the

point is complicated to prove empirically, and research is still sparse. Finally, increases in women's income and education certainly bring birth rates down, as newer options and aspirations compete with the traditional expectation that a woman will bear many children. Educated women often prefer compromises -- smaller and healthier families and more economic activity "outside" the family circle.

Eight Points for Economic Analysis

x. Development policy and programs can influence not only women's work choices but also their productive capacity. And because childbearing and child care compete for the time women have for working, women's work choices and childbearing choices tend to be jointly determined. Both depend on a variety of exogenous influences that include economic policies and programs. Because of such linkages, investments to assist women in one field often help in others. Generalizations about the potential impact of such policies or programs on work choices, productivity, and childbearing are chancy, but knowledge to date suggests that several points often hold true. (Other potentially important points are less well understood.)

1. Women tend to be disproportionately represented among the poor. In some countries, the poorer the family, the more likely it is to be headed by a woman. Women -- married or single -- often face the double burden of lower economic productivity and greater cultural restriction. Thus, economic adjustment programs or other strategies to shift employment toward high-return activities ought to involve women deliberately -- otherwise women may be left by the wayside with their dependent children, worse off than before. Requirements for women -- as for men -- vary among development programs; approaches with particular promise are noted below. In general, do not design "women only" programs. But do make an effort to understand women's special requirements and build responses to them into mainstream development programs.

2. The same set of prices on agricultural products may have a different incentive effect on men and women, because men and women may have different degrees of control over income from different products. Traditions of "separate purses" and "women's crops" or "men's crops" are especially strong in Africa. Women may be willing to work on "men's crops" only for a high differential in prices or wages. Women's greater responsibilities for child care and household chores may also encourage them to prefer types of work (often home-based) that accommodate more easily their home and family responsibilities. Societal expectations may encourage women to remain in traditional lines of work, often with weaker links to the monetized economy. Thus men and women may respond differently to the same prices.

3. When women's productive capacity is seriously constrained, it is important not simply to "get the prices right" -- to establish appropriate incentives -- but also to improve women's capacity to respond, through investment programs and policy changes. Women need what any producers need. But factor and product markets may operate more imperfectly for

women because culture, education deficits, and the effects of frequent childbearing tend to limit their access more. Specific measures to open markets up to women can often promote efficiency at low cost. Programs to provide training, technology, or inputs are commonly established when factor markets fail to provide optimal amounts, but reaching women may take more imagination and effort. This is particularly important in agriculture, home-based production, and the small-scale or informal sector, where women have to find and manage the resources to complement their labor. Agricultural extension services, small-scale credit, provision of productive inputs, and marketing assistance can be made more available to women through practical and cost-effective adjustments. Often, efforts to strengthen and involve women's groups can achieve scale economies in the delivery of services to women. For example, extension officers can work more with women's groups, women can be allowed to form cooperatives or groups to borrow even if they lack title to land, and inputs can be sold in smaller packages. Such measures can complement incentives: raising prices to elicit a supply response will work more effectively when producers can in fact respond. If this can be accomplished, then market forces can work <u>for</u>, not <u>against</u>, women, as women will be in a better position to <u>respond</u> to changing patterns of economic opportunity -- with spillover benefits in greater economic efficiency.

4. <u>Labor markets are often quite segmented by gender, with women typically concentrated in fewer, more traditional, and less remunerative lines of work.</u> This pattern may result from preference, if such lines of work are more easily combined with mothering or with women's home-based work. But such a pattern may also reflect discriminatory practices in labor markets, less access to education or training, less continuous time in the work force, or other disadvantages that women and girls may face within the family. Indeed, evidence suggests that preference is not the primary explanation. Measures to ease women's entry into broader lines of work can improve overall economic performance by permitting comparative advantage to operate better within the domestic labor market. Such measures can include essentially costless "jawboning" or regulatory changes as well as investments in training. In the longer run, education has proved to be the main route to higher incomes and broader participation in the labor force for both women and men. Educated women do not generally choose to remain in the more traditional and less remunerative lines of work. Growth fields -- and the most effective approaches for improving women's economic productivity -- will vary from place to place. In traditional surroundings, home-based agriculture may be the best immediate prospect. In East Asia, for example, labor-intensive export industries offer promise. In parts of Latin America, Africa, and South Asia, the informal sector and market agriculture may be more promising.

5. <u>Investments in human capital for women have a high payoff. But women and girls often get less than men and boys, especially when the costs to families of education, health care, and even food are high.</u>

- Despite the similar payoff in economic productivity and greater impact on family welfare and slower population growth, in most developing countries women and girls still get less <u>education</u>

and training than men and boys. The educational gap tends to close as development proceeds -- intra-family equity becomes a "normal good." But the gap still persists today -- particularly in Africa, the Near East and South Asia. In much of the world, girls are catching up at early primary levels, but far more girls than boys drop out later on. Thus the picture at later primary and secondary levels remains quite different for girls and boys. And in some regions, even primary enrollment rates are far lower for girls.

- In some regions girls also often get less food and health care and face sharply higher rates of mortality, morbidity, and malnutrition. Some evidence suggests that when women's income rises, the disadvantage for their daughters diminishes.

- Among women of childbearing age, maternal mortality still accounts for more than one-fourth of all deaths in many countries. And outside of China, most women (still the principal users of family planning) lack regular access to the various family planning services needed to delay the onset of pregnancy, promote the healthy spacing of children, and help older women to stop bearing children. Many women still remain anemic and subject to other nutritional stress, particularly during the two decades when many bear children.

- Development strategies and associated cost recovery plans should consider: a) the full social benefits of human capital investments for women (particularly late primary and early secondary education and family planning), b) the shortfall in such investments for women today, and c) the likelihood that women and girls will suffer more when costs go up. There may be a case for subsidies in social services focused on women and girls. This is because the parents who pay for daughters' education and health care do not reap all the social benefits -- many of those accrue to the daughter's own children. Similarly, society may reap benefits from family planning that extend beyond the gains to the couple. But targeting subsidies in any service is not easy. Families can reallocate resources to suit their own preferences (or those of more powerful family members). Government attempts to target resources on vulnerable groups, such as women or undernourished children, may be undone if families disagree.

- Education may be somewhat easier to target, and women can retain and put to use much of what they learn. As a first step, providing education for girls will require analyzing existing cultural patterns to find workable ways to build or strengthen demand for girls' education and to provide it in affordable and acceptable ways. This will maximize parents' own contribution to daughters' schooling and so reduce the need for subsidy. Research is limited, but these elements appear to be important: greater access to schools with regularly

attending teachers, more female teachers, careful consideration of coeducation versus single sex schools at different ages, and science-based curricula. Subsidies for girls' education may take the form of setting different fees for girls or providing them with free uniforms, among other possibilities.

- Key program needs in health and family planning include stronger prenatal screening and care (it often hardly exists), help with delivery (only about half of births in developing countries are attended by trained personnel), improved family planning, and reduction of anemia. About half of current maternal deaths could be averted by relatively simple, low-cost measures to strengthen existing programs in the community and at the first-level health facilities. Family planning programs are typically relatively inexpensive and subsidized to encourage family planning. It may be cost-effective to subsidize some forms of maternal health and nutrition practices for similar "penny-wise" reasons.

6. In infrastructure, very little work on women's issues has occurred. One obvious point is that women often have more difficulty going far from home, so that they have greater need for information that reaches home, for local roads or paths, for local water supplies, and for simple forms of transport such as carts or donkeys, depending on culture. Informational infrastructure (such as radios) can be used to reach women with educational information.

7. Improving opportunities for women can lead to more effective use of natural resources. It is primarily women in much of the developing world who find and use household fuelwood (90 percent of the household energy consumed in Africa) and household water. Women also are more likely to lack alternatives to traditional agricultural technologies that may, particularly with increasing population pressure, become environmentally destructive. Efforts to ease the drudgery of women -- who often spend several hours daily finding wood and water and more on household chores -- may release substantial time for economic activity, child care, and so on. Social forestry projects, community water supply programs, and provision of simple but more efficient stoves can all have a major impact, particularly if women are involved in the design and management of these programs. Because women are responsible for wood, water, cooking, and the like, they have more incentive to make those programs succeed.

8. The most effective measures for reducing birth rates include expanded income earning opportunities and education for women, combined with family planning and health care. Family size tends to decline as development advances and incomes rise. Because a woman's income-generating activities compete more with childbearing and child care, increases in women's incomes affect family size more than increases in men's incomes do. Women's education (more than men's) also tends to encourage smaller families. The mechanisms are not fully understood but include greater earning capacity, broader aspirations, later marriage, and greater practice of modern (more

effective) contraceptive methods. Family planning services are used more if women are offered a variety of methods with appropriate explanation and backup. Some of the most cost-effective family planning programs include outreach services run primarily by women who bring health and family planning information and some contraceptives, medicines, or nutritional supplements to their communities. This makes family planning more convenient and less costly and tends to build interest in it. Providing family planning along with other health care tends to encourage contraceptive practice because parents can be more confident that their existing children will survive.

xi. Government commitment. Improving opportunities for women remains a sensitive topic in some places. It is generally still a "leadership" issue. As women's political and economic strength increases, it will become more of a constituency issue. And as the potential economic gains from improved opportunities for women become more apparent, it will become more of a development issue. To make efforts to improve women's opportunities sustainable, it is essential to ensure continual support from finance and line ministries as well as any special institutions focused on women. As line ministries come to see efforts to include women as a valuable part of their activities, such efforts will become more "normal," hence more sustainable. The sine qua non is to demonstrate that efforts to assist women are more effective and affordable than continued neglect. Through policy dialogue and lending, institutions like the World Bank can help highlight the costs of neglecting women and the gains to development from more vigorous efforts to include them.

ISSUES FOR ECONOMIC AND SECTOR WORK

1. Over the past two years, as operational interest in "women in development" has grown, so have operation l requests for practical advice on how to involve women in development more effectively. Ideally such advice would be based on years of accumulated wisdom from research and program experience. That is not possible as research and program experience (properly evaluated) are thin. We plan to work with staff in Operations to expand the base of research and experience. In the meantime, where we can we want also to meet requests for "interim guidance" -- ideas on "how to do WID" that reflect existing knowledge.

2. This paper offers some "highlights" on women in development and outlines promising approaches for improving women's opportunities that will contribute to economic performance, poverty reduction, and other development objectives. It is based primarily on the Women in Development Division's (PHRWD) work in the past two years, involving country WID strategies, literature reviews, early-stage policy work and research, and operational support. The paper treats an enormous variety of subjects, and its suggestions are highly condensed. The paper will be supplemented over the next year or two by more detailed guidelines on such subjects as basic education; health and family planning services; agricultural extension; forestry; and credit. Other divisions in the Bank are working on guidelines for water and household energy. Other fields, such as law and infrastructure, need to be explored.

WOMEN'S ECONOMIC CONTRIBUTION

3. Economists working to promote development naturally focus on the tools of their trade -- analysis and advice based on the core concepts of macro and microeconomics. The growing interest in women in development reflects our increasing realization that we must pay more attention to social or cultural aspects of development -- how economic and social forces affect each other -- if we are to achieve maximum results from economic analysis and advice. It also reflects a shift in economic thinking.

4. Much of economic growth theory since the 1930s arises from the concept that individual economic agents operating with adequate information in competitive markets will -- by optimizing for themselves -- produce a generally efficient economy with "maximum welfare" in the Pareto optimal sense. (Welfare is maximized in the sense that no one can be made better off without making someone else worse off; nothing is assumed about the relative value of one person's welfare against another's.) Discussions of distributional issues or the dynamics of growth often stem from this starting point. The "agents" may, for various analytic purposes, be consumers, producers, firms, households, -- but they are assumed to be homogeneous, with little capacity to influence each other. They are also assumed to be fully informed. This competitive paradigm inspired the advances in thinking that underlie much current economic analysis and advice.

5. Economists increasingly believe that this paradigm needs adjusting, for several reasons. Optimizing may be less usual than "satisficing" -- settling for an outcome that is "good enough". Markets are seldom competitive in the pure sense. The assumptions of homogeneity and perfect information commonly fail.

Families do not act as one, as a single "agent" (Schultz 1989; Sen 1987). And the paradigm inadequately captures the links between the growing human population, its economic production, and the natural environment. Failure to recognize and adjust to the more diverse and complex character of reality carries a cost, in both economic and social terms. Failure to consider women is a case in point. Part of the cost comes in forgone production; part in diminished family welfare, particularly for the poor; part in rapid population growth; and part in a worrisome environmental threat.

6. This paper focuses on the economic case for specific attention to women in development. The case rests on three main points:

-- Women already contribute heavily to the economy and family, more than is generally recognized or reflected in official GNP.

-- But women face special disadvantages in gaining access to education and training, to information and the means of production, and to product markets and jobs. Both factor and product markets often work more imperfectly for women.

-- Investments to improve women's human capital and expand their economic opportunities can pay off not only for women, but for their families and the economy.

7. According to rough estimates from FAO, women account for more than half of the labor required to produce the food consumed in the developing world, and perhaps three-fourths in Africa (FAO 1985). For example, aggregate rough data suggest that African women provide about 90 percent of the labor for processing food crops and providing household water and fuelwood; 80 percent of the work in food storage and transport from farm to village; 90 percent of the work in hoeing and weeding; and 60 percent of the work in harvesting and marketing. About one-fourth of the industrial labor force of the developing world is female (Anker and Hein 1986). And, although data are sketchy, women work increasingly in vast informal sectors in rural and urban areas.

Women's invisibility

8. Much of women's economic output is produced and consumed at home, so it goes unrecognized. Unpriced, it is difficult to value; and it is often consumed almost immediately. Thus, it is seldom reflected in estimates of GNP. Many studies show that women account for much subsistence production for home consumption -- especially in Africa but substantially in Regions. Almost everywhere it is primarily women who store and prepare the family's food. Women also fetch and use most household water and household fuelwood (90 percent of the household energy consumed in Africa), sometimes spending 2-4 hours daily in this work. (World Bank OED 1988; World Bank 1989a, 1989b; Acharya and Bennett 1982; Jiggins 1987; Anker 1983; Recchini de Lattes and Wainerman 1982). And it is primarily women who care for children and see to the family's basic needs.

9. Economic and demographic surveys of households are bringing to light women's full contribution (Schultz 1989; Binswanger and others 1980; Acharya and

Bennett 1982; Birdsall and others 1983; King and Evenson 1983; Collier 1987). A detailed survey in Nepal, for example, reveals that women contribute about half of the family's full income, counting subsistence production (Acharya and Bennett 1982). In general, women work longer hours than men, rising first, often eating after others have finished, and resting less (see box) (Buvinic and others 1983). The poorer the household, the larger the share of total output likely to be provided through the unrecognized work of women. "When this omission is replicated in low income countries, where income-in-kind can be a substantial share of personal income, a serious distortion is introduced that systematically affects one's perception of women's contribution to the economy and permeates the entire quantitative record of modern economic growth" (Schultz 1989).

BOX: 1

Rural Women's Work Day

"An Indian agricultural worker's day is typical. She rises at 4 a.m. She cleans the house, washes clothes, prepares the meal for her husband and children, and leaves for the fields at 8 a.m. She works there until 6 p.m., in the meanwhile nursing the small children she took with her. On her way home she collects fuelwood and, if necessary, drinking water. She cooks the evening meal, cares for the children, and tends to the animals. At about 10 p.m. she goes to bed. On such a day, she might earn less than two rupees."

Source: Dankelman and Davidson 1988

An African woman farmer's day has been described thus:

"She rises before dawn and walks to the fields. In the busy seasons, she spends some nine to ten hours hoeing, planting, weeding, or harvesting. She brings food and fuel home from the farm, walks long distances for water carrying a pot which may weigh 20 kilograms or more, grinds and pounds grains, cleans the house, cooks while nursing her infant, washes the dishes and clothes, minds the children, and generally cares for the household. She processes and stores food and markets excess produce, often walking long distances with heavy loads in difficult terrain. She must also attend to the family's social obligations such as weddings and funerals. She may have to provide fully for herself and her children. During much of the year she may labor for 15 or 16 hours each day and she works this way until the day she delivers her baby, frequently resuming work within a day or two of delivery."

Source: United Nations Economic Commission for Africa Women's Programme, "Women of Africa -- Today and Tomorrow," Addis Ababa, 1975

Women's basic choice

10. Women contribute to development mainly through childbearing, childrearing, and production for market and home use. Production for home use generally takes place at home. Production for market may take place at home, in a self-managed enterprise, or in the labor force. Location matters: women can more easily combine childbearing and childrearing with home-based work than with work in the labor force. Economic theory suggests that women weigh the value, as they see it, of time spent in home-based work and child care against the market wage they could command (net of any costs of working in the market, such as for transport or child care), and decide accordingly. If opportunities in the labor market are highly constrained or low-paying or if women and their families value home-based work and child care highly, many women may indeed prefer the home-based option. Women's choices among these three options -- how much time to spend in the labor force, in home-based production, and in parenting -- and their productive capacity in these fields affect not only the growth and composition of economic output. They also affect the human capital (health and education) of the next generation and the size and composition of the family (through natality and child mortality).

11. In actuality, however, the choices may not be women's to make. One must understand women's position within the family and broader society in order to predict their responses to economic opportunities. Culture varies, but in traditional societies, women tend to have less say about what work they will do or about family size; they may have to defer to the wishes of their husbands, fathers, mothers-in-law, and other elders. In the early stages of development, when the family and the simple firm tend to coincide, women's work choices are confined largely to the home or nearby fields (Schultz 1989; Buvinic and others 1983; Boserup 1970). Women are typically expected to perform certain types of work, particularly in subsistence production and in the household, and to bear many children. Especially as they age, women may exercise considerable control in their customary spheres. Yet they are unlikely to have much voice over broader allocative decisions affecting the family (Acharya and Bennett 1982; Blumberg 1987).

12. With development -- with education and increasing earning opportunities -- women's capacity to decide for themselves grows. Exceptions exist, but women who can decide for themselves tend to move toward more independent and "modern" options -- more participation in the labor force, greater control over economic assets, and smaller families, with more resources devoted to each child (Schultz 1989; Acharya and Bennett 1982; Khandker 1987; World Bank, 1989a, 1989b). Women's education generally has more influence than men's on natality, child mortality, and the nurturing of children (Cochrane 1979; Cochrane and others 1980; Schultz 1989). As a rule, economic policies that influence women's education and earning capacity thus especially influence family welfare, human capital accumulation, and population trends, as well as aggregate output (World Bank WDR 80,84).

13. Low-income countries still have large traditional sectors in which most women work at home or nearby. Much of their home-based production is for home use. It provides housing and such basic consumables as food, water, and fuel.

With the advent of agricultural mechanization and firm-based production capturing gains from specialization and scale -- and the accompanying development of markets -- initial production for market is generally handled largely by men. This happens especially in cultures that place stronger restrictions on women (Boserup 1970; Schultz 1989; Schumacher and others 1980).

14. As development proceeds, men tend to gain access to newer and more profitable opportunities before women do, whether in agriculture or in industry (Boserup 1970). Usually men account for most initial formal labor force participation, particularly the higher paying, less menial, and more distant jobs (Schultz 1989; Boserup 1970). As market incentives increase, women working at home often diversify their agricultural and nonagricultural production and market an increasing share of it. In Kenya, for example, about two-fifths of small farms are managed by women, and most market substantial quantities of food and nonfood cash crops (World Bank 1989a). In Yemen A.R., as more men have migrated to the oil fields of neighboring countries, women have become more active in agriculture for market (World Bank YAR SURD2 Project).

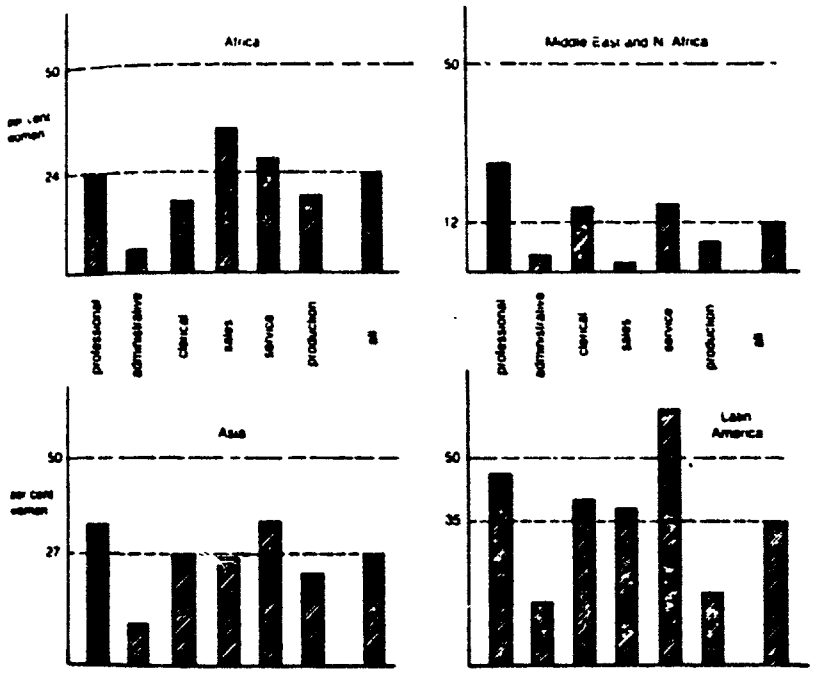
15. As the gains from firm-based production increase and the economy expands to encompass more manufacturing and services, more women join men in the labor force (Boserup 1970). Official data on the formal labor force are often weak (varying in quality and in underlying definitions) and tend to underestimate substantially the participation of women, particularly in smaller enterprises or in smaller towns where culture may frown on women who work outside the home (Anker and Hein 1986; Recchine de Lattes and Warnerman 1982; White and others 1986). But available data suggest that women's share of nonagricultural occupations tends to be highest in Latin America and lowest in the Middle East and Northern Africa (see figure 1). In Korea about 40 percent of women work in the formal labor force; in Thailand, about 60 percent. In those countries, the labor force depends heavily on women. In several East Asian countries and in Mauritius, women constitute the core of the labor force for many of the newer export industries. In Colombia and Mexico, about one out of four women work in the formal labor force -- and about one-fourth of the labor force is female.

16. But increasing labor force participation may not only reflect the pull of newer markets. In some traditional economies (for example, parts of India, Bangladesh, and Nepal), land has become highly scarce as population density has increased, and both women and men are obliged to seek available employment. Typically this involves casual, low-wage work in agriculture or rural nonfarm jobs, construction, and a wide variety of jobs in the urban informal sector (World Bank 1989b, 1989c; Acharya and Bennett 1982; Khandker 1988). Particularly in South Asia, Africa, and the Near East, Islamic culture favors relative seclusion for women, but seclusion is more prevalent among the middle class. The influence of tradition often gives way as the opportunity cost of observing traditional norms rises. In poorer countries such as Bangladesh, women are traditionally secluded but respond considerably to wage opportunities: "even a patriarch cannot withstand the high opportunity costs of keeping women largely engaged in a household non-market production, such as children" (Khandker 1987). By contrast, in several higher-income Middle Eastern countries where women's labor force participation is comparatively restricted for cultural reasons, fewer than one in seven members of the formal labor force are women (Anker and Hein

1986; Dwyer 1983; World Bank WDR 1988). (See figure 1 and annex on women's labor force participation rates and the female share of the labor force.)

Figure 1

Women's Labor Force Participation



NOTE: Averages are based on the most recent country data since 1970. The number of countries was 5 in Africa, 12 in N. Africa and the Middle East, 13 in Asia and 21 in Latin America.

SOURCE See Table 2.3 and Table 2.6

FIGURE 2.2 *Women's average share of non-agricultural occupations in major geographical regions, including self-employed and unpaid family workers*

Source: Department of Commerce, 1985.

The Costs of Neglecting Women

17. In principle, women contribute to the economy no differently than men. Like men, women do the work of development -- as producers, entrepreneurs, managers, paid and unpaid laborers. In practice, though, women often face gender-related traditions or practical difficulties that constrain their work choices and productive capacity. Women may operate efficiently with whatever technology and resources they have. But they may not be able to obtain as good technology or as many inputs as men, either because they lack the credit to "get started" or because they face stronger barriers to entering factor markets. This may reduce their productivity and affect their incentive to produce.

18. The most obvious cost is in output forgone, from wasted human potential and associated inefficiencies in factor and product markets that can impede flexible adjustment and expansion. Little research has been done to estimate the extent of this cost. Evidence from Kenya suggests that women's agricultural productivity averages only 85 percent that of men's, but that women with the same access as men to education, land, and agricultural services actually achieve slightly higher productivity measured in yield per acre (World Bank 1989a).

19. Another cost comes in equity and family welfare, as women and their dependent children tend to suffer disproportionate poverty and deprivation. A further cost is in longer run "sustainability." As the principal guardians of children's health and nutrition, women manage the early human capital accumulation that affects the future labor force. Women typically manage household water and fuelwood and so affect the natural environment. And improvements in women's earnings, education, and access to health and family planning services particularly affect family size and hence population growth. These costs may be obscured, and potential benefits forgone, if country and sector analysis and policy advice focus only on aggregates such as the economy, the sector, or even firms or households, without differentiating by gender.

20. Female headed households. Female heads of households are not rare, but their incidence varies by country. In Jamaica some 37 percent of the population lives in female headed households; in Zambia, some 47 percent of households are headed by women; and in Guyana about 44 percent (Jamaica LSMS 1988; Berger and others 1988). The problem of disadvantaged women may be particularly acute when those women head the household. In some countries, female-headed households tend to have fewer adult workers per household (translating to a higher economic dependency ratio), and few if any adults with comparatively greater earning capacity. In some countries, such as India and Kenya, the poorer the household, the more likely it is to be headed by a woman, and the trend is toward more poor female-headed households. This is not true only of low-income countries -- it is also true in the United States (Levy 1988). On the other hand, there are places where better educated women tend to head households. The exact characteristics of female heads of household vary, however. In some countries, older and destitute widows may predominate; in some, young and less educated mothers; in some, young and more educated mothers -- and this last group is usually poorer. Much more research needs to be done to predict which women will head households, with what consequences.

21. Government commitment. Efforts to improve opportunities for women run the risk of being treated as a "vogue" and fading unless their actual value for development can be demonstrated to governments hard-pressed to find resources to cover even the most basic programs. This paper concentrates on showing the potential gain to broader development objectives -- such as economic growth and efficiency, poverty reduction, or slower population growth -- from expanded opportunities for women. The Bank can play a key role in explaining these arguments through policy dialogue so that measures to involve women become a normal part of line ministry operations -- and not a "special interest" pleading. The case rests on two points: first, the potential gains; and second, the availability of affordable, effective approaches. We know more about the former than the latter. Information on the cost-effectiveness of particular ways to help women is sketchy. It is crucial to rigorously test specific measures in the next few years, if the current initiative to assist women is to achieve lasting results.

EQUITY, HUMAN CAPITAL ACCUMULATION, AND WELFARE IN THE FAMILY

22. Cultural constraints on women pervade the household and, particularly in poorer regions, leave women at a disadvantage as producers and consumers. The disadvantage often begins early for girls. Especially in low-income households, they tend to receive less of the education and health care that would enable them eventually to respond to economic opportunities (see table 1 for health and education indicators). The disadvantage persists into adulthood. Women who are ill, weak, poorly educated, and ill-equipped to time pregnancy have more difficulty obtaining and using the resources and information needed for full productivity or family needs. The cost of constraining women thus extends to the family -- particularly to children -- and to the economy.

23. Analysis to improve women's opportunities ought to extend beyond economics, to culture and society. It should start by disaggregating within the household by gender, to see who has what access to information, resources, and human and physical capital, and to see how policies and programs may influence that distribution. This will often require a sensitive analysis of how families work -- of the roles of men and women. Women's welfare hinges heavily on men. To find acceptable ways of helping women, one must understand the real, as opposed to the public, attitudes of men and women. Attitudes are changing in many places, of course, as development -- particularly education -- proceeds. It is important to understand both basic traditions and major areas of cultural change that affect women.

Inequality of Human Capital Investments in the Family

24. Most economic analysis treats the household as a unit -- assuming a consensus on objectives (expressed in a single utility function) and a pooling of resources to meet those objectives. In fact, the interests of different household members often conflict (Acharya and Bennett, 1982; Bevan and others 1988; Blumberg 1987; Schultz 1989; Sen 1987). Stronger members of the household impose rules on the labor and resource allocation or consumption of weaker members, including women. Even if women retain control over a traditional sphere of "women's work," subtle social forces within a male-headed household or society may leave women on balance at a disadvantage (Acharya and Bennett 1982; Sen 1987; World Bank 1989b; King and Evenson 1983). This disadvantage may show up in patterns of consumption of food, health care, education, and the like.

25. It is difficult to determine precisely who consumes what in a household, particularly from household production. Studies of intrafamily distribution of resources and consumption patterns therefore often focus on indicators of human capital investments in children or women, as human capital is embodied in the individual and is in important respects measurable (Schultz 1989; Chen and others 1981; Horowitz 1980). Key indicators include life expectancy at birth and schooling.

26. Lower life expectancy. Despite cultural variations, women tend to be most at a disadvantage in the poorer countries, as measured by health indicators. Where resources are plentiful, "natural" life expectancy for women exceeds that

of men -- as data from higher income countries demonstrate (see table 1). But in poorer countries, life expectancy at birth for women and men is about equal, and the natural advantage of women emerges only as income rises (see table 1 and box) (World Bank WDR 1988). Moreover, the ratio of girls to boys up to the age of four is below .95 in a number of countries, particularly in South Asia (World Bank WDR 1988). This may reflect undercounting of girls in societies where girls are comparatively less valued, but evidence suggests disproportionate mortality for very young girls in India and China (see box) (Chatterjee 1988).

27. Age-specific mortality rates for women in the childbearing years are also sometimes higher than for men, as in India and Ethiopia. In the development world as a whole, millions of "missing women" have died prematurely (Sen 1987). Women's health is not well studied, but it appears that maternal deaths account for over one-fourth of all deaths of women in the childbearing ages in many developing countries. About half of all maternal deaths occur in the low-income countries of South Asia and 30 percent in Africa (see box) (WHO 1987). Such gender-related disadvantages tend to diminish as incomes increase: with increased wealth, families treat children of both genders more equally and women's reproductive health improves.

28. Women's disadvantage as measured in health indicators may reflect cultural traditions, such as reserving the best food for men or boys, feeding men or boys first, or devoting more time to the care of boys than to girls when children fall sick (Chatterjee 1988; Pitt and Rosenzweig 1988). Particularly in South Asia, women and girls apparently often suffer poorer nutritional status, especially when the household is short of food (see box) (Schultz 1989; Chen and others 1981; Horowitz 1980; Chatterjee 1988). However, some evidence from Africa and the Near East indicates a similar nutritional status for boys and girls. In the Philippines, for example, family members reportedly spend 23 percent less time in child care for girls than for boys (Evenson and others 1980).

29. Although women usually bear primary responsibility for safeguarding family health and often find health care for others in the family, they may have difficulty obtaining health care for themselves (Herz and Measham 1987; Chatterjee 1988). In some places women need a male relative's permission to seek health care. In some places they can only be treated by female health workers (Kwast 1987). And in some places, clinics report fewer female than male patients (Bevan and others 1988; Ravindran 1986; Chatterjee 1988), although women are more likely to need health care, particularly during the childbearing years. Most rural women work longer hours than men. The physical strains of housework, fetching water and fuelwood, and agricultural labor, combined with frequent pregnancies and minimal rest and leisure time, exact a toll on women.

30. Less schooling. Substantial evidence shows that women in poorer countries are also at a greater disadvantage in education (as measured by either years of schooling or enrollment rates (see tables 1 and 2). In high-income countries, women attend school about as many years as men and may report higher enrollment rates, at least through secondary school. In Latin America and East Asia, women receive 94 percent and 83 percent, respectively, as much education as men. By contrast, the countries of South and West Asia and Africa invest only about half

Table 1.

WOMEN'S EQUITY AND DEVELOPMENT STAGE

Life Expectancy at Birth (1986)

(Years)

	Male	Female	Gap
Low Income ex. China & India	52	54	2
Low Income	60	61	1
Lower Mics	57	61	4
Upper Mics	64	70	6
Industrial	73	79	6

Note: The "normal" situation is for women to outlive men.

Primary School: Gross Enrollment Ratios (1985)

(Percentage)

	Male	Female	Gap
Low Income ex. China & India	75	56	19
Low Income	110	88	22
Lower Mics	111	100	11
Upper Mics	108	102	6
Industrial	101	101	0

Secondary School: Gross Enrollment Ratios (1985)

(Percentage)

	Male	Female	Gap
Low Income ex. China & India	28	16	12
Low Income	41	26	15
Lower Mics	50	41	9
Upper Mics	66	63	3
Industrial	91	92	-1

Source: World Bank, World Development Report, 1988, Tables 30 and 33.

TABLE 2

YEARS OF SCHOOLING COMPLETED AND EXPECTED YEARS OF ENROLLMENT RATIOS
BY SEX, FOR REGIONS FROM 1960 AND 1980: SELECTED AVAILABLE COUNTRIES

Region (no. of countries observed)	Years of Schooling 1960-1980 Completed Age 20-24		Expected Years of Enrollment			
	Female to Male Ratio	Male Level in Years	Female to Male Ratio		Male Level in Years	
			1960	1980	1960	1980
	(1)	(2)	(3)	(4)	(5)	(6)
1. High income industrially advanced coutries (including Japan, Israel, and South Africa)	1 (24)	8.9 (24)	0.94	1	10.8	12.6
2. Latin America	0.94 (22)	5.5 (22)	0.92	0.97	5.6	9.8
3. East Asia (excluding Japan)	0.83 (8)	6.4 (8)				
4. South Asia	0.45 (5)	3.8 (5)	0.65	0.75	7.5	9.4
5. West Asia (excluding Israel)	0.34 (2)	4.7 (2)				
6. North Africa	0.39 (2)	3.5 (2)	0.49	0.73	5	9
7. Sub Saharan Africa (excluding S. Africa)	0.44 (7)	3.3 (7)	0.56	0.73	3.5	7
World Total	n.a	n.a	0.75	0.82	7.7	9.8

Asia (excluding Arab)

Arab States

Africa (excluding Arab)

Source: Columns 1 and 2 derived by averaging of the available sample of country estimates reported in Table A-1 by the author. Column UNESCO estimates of enrollment rates by level, with different regional groupings. 1987 Statistical Yearbook, Table 2.10. See footnote expected years of enrollment.
Source: Schultz, 1988, TableWomDev 10/4/88. Note: (From next page)

as much in women's schooling as in men's (Schultz 1989). As real income increases per adult, enrollment rates for men and women increase but women begin to catch up, as the income-related increase in enrollments is substantially larger for women. Enrollment rates for women are also more sensitive to the cost of education as measured by teachers' wages. Enrollment rates for women are actually higher in Africa than would be expected from the existing low levels of income and relatively high wage rates for teachers, but enrollment rates are even lower than low incomes and teacher wage rates would imply in South Asia (see box) (Schultz 1989). In general, in many countries women have begun to catch up in educational enrollment and attainment especially at lower levels of primary school but remain at varying degrees of disadvantage thereafter.

Note:

31. The expected years of education reported in table 2 is a synthetic cohort measure. It is defined as the sum of the three commonly reported age-specific enrollment rates -- associated roughly with primary, secondary, and higher educational levels -- weighted by the six-year length of the age intervals used to compute each of the enrollment rates. Thus it represents the number of years an individual would enroll in school if he or she enrolled at the average rates reported from age 7 to 25 in a particular year. There are many reasons to suspect that these enrollment rates exceed attendance rates, and the actual time and effort applied to schooling undoubtedly differ greatly across countries and over time within countries.

BOX: 2

Excess Female Mortality in India

India is one of the few countries in the world where males substantially outnumber females: 935 females to 1000 males, according to the 1981 census. The sex ratio at birth favors males (952 females to 1000 males). In most populations this biological advantage is eliminated by the age of 1 because of higher mortality among male infants, but in India, male and female infant mortality rates are equal (104 per 1000 live births in 1984). After age 1, female mortality is clearly excessive: the mortality rate among girls 0-4 years old is 43.0, compared to 39.5 for boys (1984). Between ages 1 and 29, female mortality remains 25 to 40 percent higher than male mortality; for the age group 30-34, it is 10 percent higher. The gender gap in mortality is greatest in early childhood when most deaths actually occur: 48.8 percent of all female deaths and 45.3 percent of all male deaths are of children 5 or younger. The ratio of girls to boys decreases continuously up to age 15. The disadvantage to girls worsens as birth order rises. A recent study in the Punjab recorded a female to male mortality ratio of .75 among first-born children 4 and younger (Das Gupta 1987). The ratio jumped to 1.3 for second children and to 1.53 for fourth or later children. Even higher mortality rates were found among second-born girls if the first surviving child was already a girl. States with the highest mortality levels have the greatest male-female differentials.

Source: Meera Chatterjee, World Bank, 1989b Background Paper, 1988

BOX: 3

Literacy Among Women in India

Most Indian women are illiterate. According to the 1981 census, only 28.5 percent of females could read, compared to 53.5 percent of males (excluding children aged 0-4 years). Of the 340 million illiterates in India, about 200 million are women. The rural female literacy rate in 1981 was 20.7 percent -- less than half the rural male literacy rate and barely more than one-third of the urban female literacy rate. In urban areas, 54 percent of women are literate, compared to 74 percent of men. Younger women are more literate: 36 percent of rural girls 10-14 years old can read, compared to 62 percent of boys. In urban areas, the gap begins to close: 73 percent of girls aged 10-14 can read, compared to 82 percent of boys. Illiteracy is far more prevalent in the poorer districts of five states (Andhra Pradesh, Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh); in Kerala, by contrast, all districts report that 50 to 80 percent of females can read. Among scheduled castes and tribes in rural areas, fewer than one-tenth of females and about one-fourth of males are literate.

Source: Kurrien, World Bank, 1989b Background Paper 1988

BOX: 4

Female Enrollment in India's Primary and Secondary Schools

Since independence, female enrollment has accelerated faster than male enrollment, but girls remain at a disadvantage. Gross enrollment ratios for girls in Standards I-V increased from about 25 percent to about 77 percent; for boys, only about 61 percent to 109 percent. For Standards VI-VIII, girls' enrollment rates increased still more dramatically, from 4.6 percent to 38.1 percent, compared to an increase for males from about 21 percent to 65 percent.

Despite this progress, only about 40 percent of students enrolled in primary school today are girls, and only about 35 percent of the middle school students. The 1981 census indicates that the most educationally deprived young children are rural girls, particularly from lower income groups. About half of all children 6 to 13 attend school; only one-third of rural girls in that age group do. To put it another way, half of all children 6 to 13 who are not attending school are rural girls -- some 37 million girls in 1981.

The 1981 census suggests that only about 9 percent of rural girls (compared to 31 percent of rural boys) aged 15-19 still attend school. Only about 3 percent of the girls complete high school or higher secondary school. Many rural Indian girls aged 14-17 are married. The picture in urban areas is more encouraging. Some 34 percent of urban girls in this age group still attend school, compared to 50 percent of boys. In 1980-81, girls constituted some 18 percent of high school and higher secondary students in urban areas and 10 percent in rural areas. The proportion of women to men in higher (university) education increased to 37 percent in 1980-81.

Source: Kurrien, World Bank, 1989b Background Paper 1988

Bargaining in the Family

32. The inequality in women's educational attainment and the evidence on health and nutritional status, together with other sociological evidence, suggest that the concept of a "unitary family" or household does not always apply. In the "unitary household" either everyone agrees on objectives and pools resources or one "family head" dictates family preferences and determines resource allocations. Much evidence suggests that in many societies people bargain in a family -- so it is important for analysts to grasp the concept of "cooperative conflict." (The "unitary family" is considered a special case of the broader bargaining model, but in the unitary family little bargaining occurs because one person dominates.)

33. Controlling income. The bargaining pattern may evolve as development proceeds: women are likely to see their own interests differently and to gain bargaining strength as they earn more and gain more control over income. The situation varies by culture, of course. Families in many countries in sub-Saharan Africa, Latin America, and East Asia now often reflect a bargaining model in which women have considerable bargaining strength (Lele 1986; Blumberg 1987; Schultz 1989; Folbre 1986). In Cameroon, men and women control income from different crops, and women prefer to work on their own crops even when the value of marginal output on their crops falls short of what they could produce working on their husbands' crops (see box) (Jones 1985). In Thailand and Peru, women who control assets of their own at marriage or who have other sources of unearned income tend more often to opt out of the labor force (Schultz 1989; Khandker forthcoming). Families in South Asia, where men are more dominant, generally behave more like the typical neoclassical household (Schultz 1989; Lele 1986). Yet in South Asia too this pattern is subject to economic influence: women's position in the family appears to get stronger -- and lead to more bargaining -- as women's cash income grows (World Bank 1989b; Sen 1987; Hossain 1988; Acharya and Bennett 1982; Folbre 1986; Blumberg 1987).

34. Men and women sometimes spend income differently (Blumberg 1987; World Bank 1989b). The survival rates of girls and boys, or those of men and women, may relate directly to the relative contributions of women and men to a family's cash and kind income (Schultz 1989). In India, where female mortality exceeds male mortality, district level data and household level surveys indicate that the more the local labor market activity and income of adult women relative to adult men, the greater the survival of girls relative to boys (Rosenzweig and Schultz 1982). Research in India shows that women spend proportionately more of the income they control on the family and less on personal consumption than men (World Bank 1989b).

35. Reaching women and girls. How, then, may the structure and incentives of the family affect measures meant to improve the situation of women? Resources transfers targeted to women and girls may be in vain if families compensate by reallocating other resources away from them. Some evidence suggests that this happens: children involved in school feeding programs are sometimes denied the usual amounts of food as families compensate (Schultz 1989; Chen and others 1981;

BOX: 5

Women's Economic Incentives

A study of rice production in Cameroon found evidence of household production decisions that resulted in suboptimal production of the cash crop and failure to maximize income. This could be explained by the compensation women received for their labor. Revenues from the sale of rice were traditionally controlled by men, although women were expected to contribute their labor. Women derived income from the sale of subsistence crops, the returns to which were considerably lower than for rice. Wives were willing to work on rice only when they were compensated for their labor according to the market value of their product, or at least well above what they could earn on subsistence crops. Otherwise they chose to work on subsistence crops, even though this kept the family's total income below the potential maximum. This demonstrates the shortcomings of assuming a "unitary household." The bargaining model, reflecting who controls what, may be more appropriate. It also indicates the potential cost to productivity of denying women the fruits of their own labor.

Source: Jones 1985

A study in Guatemala found that in three villages that produced vegetables for an agribusiness venture, different structures of female participation, incentives, and labor remuneration had different effects on production and output quality. In the first village, where women were not involved, the project suffered for lack of labor. In the second village, where women were involved as laborers (taking time from income-earning activities as market vendors) but were remunerated for their efforts only indirectly (through checks made out to their husbands), project performance was better than in the first village but less than good. In the third village, where women were paid directly in cash for their efforts, product yields and quality were by far the best. Thus the level and quality of production appear to reflect not only women's participation in the project but also the compensation they receive and their control over it.

Source: Carloni 1987

World Bank 1989b). Investments in human capital for women -- especially education, but also health and family planning services -- are appealing not only because they pay off for society and for the family but because they also pay off for women. Women's education cannot be taken from them. It can, of course, be wasted or eroded through non-use. But it is capital that women carry with them.

Women's Education

36. Economic returns to female education. The case for female education is well established and powerful. For women as for men, the accumulated evidence underscores the singular importance of education as a way of breaking out of old molds -- of gaining access to more kinds of work, of earning higher income, of improving family welfare, of changing childbearing patterns -- in short, of increasing options. Investments in women's education produce about the same relative private internal rates of return as investments in men's education as measured by the proportional increase in wage rates after education (Schultz 1989).

37. Most research, however, does not adequately correct for the potential bias introduced because market wage rates can be observed only for a selected sample of people -- those who have jobs. Recent research that does make such corrections -- notably research in Peru and Thailand -- generally confirms strong rates of return on women's education at the primary and secondary level but would reduce previous estimates of the rates of return on university education (Schultz 1989; King forthcoming; Khandker forthcoming). The return at the secondary level is very high in both Peru and Thailand.

38. Other evidence (for example, in Kenya and Nepal) also confirms the longstanding theory that education is particularly important in enabling people to respond to and capitalize on a changing environment. Several years of education may sometimes be needed to equip people to respond. This has obvious implications for girls who tend to drop out of school after a few years, and sooner than boys (Jamison and Moock 1984).

39. Social returns to female education. The payoff of women's education in improved family welfare and smaller family size is also solidly established. Educated women generally tend to prefer smaller families (the relationship is clearer when research adjusts for the husband's education and income.) Women's education generally contributes more than men's education to children's health and nutrition and possibly their learning (see box) (Cochrane and others 1980; Caldwell 1979; Schultz 1989). Studies in the 1970s and 1980s in demography, economics, anthropology, sociology, and medicine concluded that a strong, probably causal, link existed between increases in a mother's schooling and decreases in the incidence of mortality among her own children. An added year of maternal education is generally associated with a 5 to 10 percent reduction in child mortality (Schultz 1989). Although the level of mortality tends to be higher in rural than in urban areas, maternal education has a similar proportional effect in either location (Schultz 1989; Cochrane and others 1980). Schooling gives mothers knowledge and confidence to try new ideas. Since these economic and family-welfare returns on women's education are internal to the family, why do families not invest equally in education for girls and boys?

BOX: 6

Maternal Education and Child Mortality

A World Bank study investigating the relationship between maternal education and child mortality using data from 17 countries[1] found that "regardless of measurement technique, it appears that an additional year of schooling reduces mortality for infants and children by 9 per 1,000. There is no evidence that this effect differs by urban and rural areas, but there is evidence that it is cumulative and becomes stronger as a woman ages... The consistency of these results is rather remarkable considering the wide range of environments."

The average of the significant coefficients for wife's education was -.18. For husband's education the average was much lower: -.08. In the individual studies, in all cases except urban Colombia, the husband's education has half (or less) of the effect of the wife's education.

Source: Cochrane and others 1980

40. Explaining the shortfall in female schooling. Many studies show that as parental incomes rise, girls tend to "catch up" to boys in schooling; the income elasticity of education for girls exceeds that for boys. Increases in either parent's income are associated with increases in children's education over the long run. But these patterns vary across countries and cultures. In Latin America, women have almost caught up with men in basic education in most areas; in much of Africa, South Asia and the Near East they still lag seriously behind men in years of schooling. Substantial increases in income and many years may be needed before girls progress rapidly in some areas. Hence the need to see what measures might help short circuit the process. Family and community attitudes and the type of schooling available all apparently matter, but more research is required to sort out what matters most in which circumstances.

41. Why the demand for female education is low. Poorer parents often feel that educating sons is a necessity but educating daughters a luxury. This is reflected in the "catch-up" pattern for girls as parental incomes rise. There are several possible reasons why, but they come down to this: Either parents do not realize how high the returns to girls' education are, or parents know more about the actual (social and economic) costs and benefits of education than many researchers do.

---

[1]Bolivia, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Paraguay, Peru, Thailand, Jordan, Tanzania, Uganda, and Malaysia.

42. In deciding whether to send a daughter to school (or for how long), parents must weigh the likely benefits of education against its opportunity costs, as they see them. As parents see it, the return to a daughter's education may be lower than the return to a son's. Educated women do tend to earn less than educated men. Usually women work at lower paying jobs and some women are paid less than men who do similar work. But the rates of return on male and female education look similar in economic research because the opportunity cost of educating girls -- the value of time lost from work while in school -- is also lower, as commonly measured. Most research measures opportunity costs using wages that children could earn if they worked. Usually girls' pre-education wages are so much lower than boys' that the wage increase resulting from education for girls looks similar to or higher than that for boys. But the opportunity cost for girls may actually be higher than this research indicates, for several reasons. Parents often expect girls to do more chores than boys at home. They may be less willing to send girls to school poorly clothed or without transport. They may require a school with adequate privacy, and may fear that a daughter could become pregnant before marriage if she stays in secondary school. In effect, these concerns raise the opportunity cost for girls and so reduce the net gain from education.

43. Cultural traditions also constrain demand for wives' education. Husbands often want wives with education similar to but not exceeding their own. Or family elders or society may consider that "overeducated" women are likely to disrupt family life and the status quo.

44. Parents do not always gain much directly from educating their children, and may gain less from educating their daughters. Poor parents also feel that sons are more likely to support them in their old age. They may think sons stand a better chance than daughters of finding well-paying jobs. They may expect girls to "marry out" of their own family into their husband's family, so that they cannot recoup their daughters' earnings. Or society may frown on families who accept help from daughters. Parents who consider sons more likely to contribute to the family and to support them as they age, especially lower income parents, effectively expect a lower return on their daughters' education.

45. Moreover, the daughter's parents do not directly benefit when her education enables her to improve her own children's health or learning. These are benefits that the daughter, her husband, and her children enjoy. The grandparents paid her school bill long since. Of course the grandparents may enjoy seeing their daughter's children thrive, but that must seem a distant prospect when school bills for daughters come due. And the lower the income, the more likely parents are to discount future benefits substantially.

46. Parental demand for daughters' education generally seems to be weaker in rural areas, where societies tend to be most conservative. Parents in urban areas and parents with some education themselves may be generally more willing to educate their daughters. Some evidence suggests that parents may be more willing to educate girls as more young women delay marriage to work in the labor force or as education comes to be regarded as a good substitute for a dowry, but more research is needed on these issues.

47. Weaker demand for girls' education probably means that increases in costs to parents will lead to higher dropout rates for girls than for boys (Schultz 1989). There are exceptions, however, in several Southern African countries where girls' enrollment exceeds boys' enrollment. It is not known how this pattern relates to the extensive migration of men to work in South Africa and the resulting high incidence of de facto female heads of household (Wheldon 1986). On the whole, however, especially in the poorer countries of South Asia, parents are less likely to educate their daughters than their sons (Schultz 1989). Firmly entrenched social norms will take time and effort to change.

48. Better schools can build demand. Parental demand may be stronger for certain kinds of schooling. To change social norms to favor girls' education, it may be easier in the short run to change the kind of shooling offered. Research and experience suggest that parents of both daughters and sons are more willing to send their children to school when the school is reasonably close and when they are confident that a teacher will regularly be there to teach and supervise their children and has something reasonably useful to teach -- in short, when education is a real possibility. Demand may be stronger when they feel the children are studying subjects and learning skills that are not too esoteric -- that have some perceivable utility. The quality of books and equipment may also matter.

49. Schools may also fail to meet particular cultural requirements for girls. In some societies, for example, girls may be permitted to learn only from female teachers, of which there may be too few, as in Pakistan (see box). Even parents of sons may prefer female teachers, as women may be less harsh. Recruiting female teachers is probably one of the most effective ways to increase female enrollment. But it may also be most difficult to develop a cadre of female teachers to post in rural areas precisely in those cultures where restrictions on girls are heaviest and the need for female teachers is greatest. There may be too little physical seclusion for the girls (or the female teachers) at school. Inadequate lavatories are a particular problem for women and girls. Separate schools for girls may be needed.

50. Special requirements for girls may raise the cost to parents or society of educating girls. The main costs to society are likely to be teachers' salaries, buildings, and basic supplies, however, and the main costs to parents are likely to be fees that are similar for boys and girls.

51. More research is needed on parental willingness to pay for girls' education. Evidence from Kenya suggests that parents will pay substantial sums to educate girls at private community schools when they cannot gain admittance to publicly funded schools, but more girls at the private schools study scientific subjects (World Bank 1989a). Several studies discuss the importance of appropriate peer groups and suggest that girls' schools may be advantageous (see box).

52. Parents may also be more willing to educate girls who perform well in school. In some countries, girls' performance is weaker than boys', particularly in science (Eshiwani 1985; Kurrien 1988). The causes for this are not well documented, at least in the economic literature. But part of the explanation

lies in girls' more irregular attendance, as it is often girls who are withdrawn from school first to handle family responsibilities (Chamie 1983; Eshiwani 1985). Teachers may contribute to the problem by believing that girls "cannot learn science" or that girls ought to pursue "feminine fields" (which still often happens in industrialized countries). Dealing with this issue is obviously difficult from a policy point of view. Girls' performance may not improve unless they are given "equal opportunity" to attend school and time at home to prepare their lessons -- and until teachers believe that girls can and should learn (Eshiwani 1985).

53. The social returns to female education substantially exceed the private returns and accrue mostly to the daughter and her family, but her parents pay the cost. So there is a strong prima facie case for special measures, including subsidies, to encourage female education. Since most developing countries are now operating in a highly resource-constrained environment, it is important to design education programs for which parents will help pay, assuming such efforts are consistent with basic concerns about quality.

Promising Approaches in Education

54. The first step in improving girls' education is to consider who is enrolled and why. This involves comparing enrollment rates for girls and boys and data on school attainment; examining background variables such as location, family occupation, income, education, and culture; and considering the type of school available. Then measures must be identified to: a) improve supply to take maximum advantage of existing demand; and b) build up demand -- usually a slower process. (See annex for statistical indicators.)

55. Increasing the supply. Girls' enrollment can be increased simply by expanding the supply of schooling. Providing alternative locations for schools may improve coverage and decrease travel requirements. More girls may attend schools that are close to home -- which raises classic "quantity/quality" arguments. It may be better, for example, to set up many local "one-room school houses" than a few larger, better equipped, but more distant schools. Recent research suggests that such local schools may actually be more effective at basic education levels, so that the feared trade-off between quantity and quality may not exist. The benefits and costs of such alternative designs for school systems will have to be weighed. In areas where most boys now attend school, additional schools primarily increase girls' enrollments. Even where parents are basically willing to educate girls, the supply of school places may be more limited for girls than for boys (Chamie 1983; Lycette 1986).

56. Improving quality. In sum, female education can be improved by responding to parental concerns about the kind of schooling offered and physical access to school. the following possibilities, among others, are widely recommended:

a) Hire more female teachers (particularly from the communities they serve, if necessary by relaxing qualifications) and consider incentives, housing, transport and other practical requirements for posting them in rural areas and ensuring their regular attendance.

b) Provide girls and women with adequate seclusion and lavatories.

c) Adjust schedules (especially in rural areas).

d) Change the curriculum to make it more relevent to local production activities, family welfare, and income-earning capacity, and remove gender bias in books.

e) Encourage teachers to encourage girls to remain in school.

f) Develop political leaders and female role models in the society who are willing to encourage girls and women students.

g) Promote girls' and women's organizations that can improve self-esteem by building solidarity, particularly in cultures where educating women is still rare.

h) Offer family planning information and services to young women in and out of school.

i) Expand single-sex schools.

j) Help young women enter the labor force, save, and strengthen their ties to their natal families after marriage.

k) Provide informal education to adult women by radio, agricultural extension, and other means.

l) Consider the influence of the parents' own social and economic background, earning capacity, and assets (differentiating father and mother), and design school facilities and curricula with greater sensitivity to family circumstances.

m) Provide incentives, for girls, such as reduced school fees or other subsidies, such as free books or uniforms.

BOX: 7

The Limited Supply of Girls' Secondary Schools in Kenya

At the time of independence in Kenya, far fewer women than men had any education. In Kenya as elsewhere, as incomes have increased, the disparity between girls' and boys' educational attainment has decreased -- but girls still tend to drop out of school sooner than boys. One-third of the girls and two-fifths of the boys complete primary school. Fewer than half of those boys and girls go on to secondary school. About 9 percent of girls and 12 percent of boys finish.

Girls and boys generally go to primary school together, but some still go to separate secondary schools. At the secondary level, girls are at a disadvantage because more are obliged to go to schools that receive less government support and charge higher fees. Despite faster expansion recently in girls' places at the supported secondary schools, the schools still don't have places for all of the girls who qualify.

Kenya Girls' Secondary Enrollment
('000)

	Government Maintained			Goverment Assisted			Unaided			Total		
Year	M	F	%F	M	F	%F	M	F	%F	M	F	%F
1980	129	61	(32.1)	48	48	(50.0)	72	59	(45.0)	249	168	(40.3)
1985	135	74	(35.4)	50	40	(44.4)	84	52	(39.2)	259	176	(40.4)

Source: World Bank 1989a

BOX: 8

Increasing Girls' Enrollment in India

Most school-age children who have never attended school or who dropped out early belong to families with limited assets and income, who tend to be lower in the caste and occupational hierarchy. Their parents tend to be illiterate or semiliterate, with low educational achievement. In rural India, girls are more likely to drop out of school early if they come from families with little or no land and few resources -- such as agricultural laborers, small farmers, and artisans. Their urban counterparts live mainly in the slums. Parents keep children from school primarily so the children can work and contribute to the family, but also because of the direct costs of education. No school fees are charged, but expenses for clothes, uniforms, books, and other materials can be substantial, especially for poor families. Girls tend to be withdrawn from school sooner than boys. The 1981 census suggests that there were about 13.6 million working children aged 5-14, but these data cover wage-earning children and probably exclude most children who work as domestic workers or at other marginal economic activities. The census indicates that 24 percent of girls aged 11-13 years in rural areas and 9 percent in urban areas are in the work force. Hardly any children in the work force attend school. Moreover, children -- especially girls -- contribute their labor to the family. In Rajasthan, younger girls worked an average 5.5 hours and older girls 7.7 hours daily in the family, compared to 1.8 hours and 3.6 hours for boys.

The Indian government has adopted a policy favoring incentives to improve the enrollment of students from poorer socioeconomic groups, with a small bias in favor of girls. It has recommended providing free uniforms, textbooks, and paper, and offering attendance incentives. Free uniforms are provided to students in about 12 percent of primary schools and 9 percent of middle schools; free textbooks in 13 percent of primary and 16 percent of middle schools; and midday meals in 27 percent of primary and 17 percent of middle schools. So far, incentives programs have been limited and like the design or existence of programs, vary greatly, state-by-state. The most extensively studied programs are the midday meal program in Orissa and Tamil Nadu, which did not conclusively increase girls' attendance. A review of midday meal programs in 12 states found that they increased girls' attendance but that the impact on retention rates was unclear. These programs did improve the supply of food to school-age populations. Other incentive programs reportedly increased the attendance of children from poorer groups but may not be replicable because of cost. Some small programs to provide day care for younger children reportedly increased the school attendance of older girls who would otherwise have had to care for younger siblings. The need to provide more female teachers to increase the enrollment of girls has been emphasized, but fewer than one-third of all primary and middle school teachers are women, and the proportion is lower in most states with low female elementary school participation. The proportion of women among new teachers increased from about 25 percent in 1951-56 to about 64 percent in 1976-81. The government is applying qualification standards more flexibly and expanding training for female teachers.

Source: Kurrien 1988

BOX: 9

Bangladesh: Innovations in Primary Education

In 1980, the enrollment of girls in primary school was significantly lower than the enrollment of boys. One reason for the lower female enrollment was the lack of parental and community support for the education of girls. Traditional parental attitudes favored protecting girls and educating them at home, especially when they could not be properly clothed. To help overcome this obstacle, free uniforms were included as a component of the loan.

World Bank loans have tried further to overcome the economic and socioreligious obstacles to girls' education in Bangladesh. The 1985 Primary Education Project, for example, sought to increase female enrollment by increasing the number of female teachers, by revising curriculum and textbooks to include more positive female roles, and by providing schools with more private facilities such as lavatories.

Source: World Bank

57. Reviews suggest little evidence is available on the cost-effectiveness of such interventions in the economic literature, as few large-scale surveys have permitted their assessment (Chamie 1983; Lycette 1986). But the sociological and anthropological literature and the experience of teachers and education specialists suggest that it is worth testing such interventions in a rigorous way, with variation across social and economic groups, to help develop cost-effective ways to improve female education. Tests that cover several interventions among populations of varying characteristics would be elaborate, but simpler controlled or quasicontrolled experiments with one or two promising interventions could contribute substantially to our knowledge of "what works." Often natural experiments can be devised when programs plan to phase in new interventions, as long as trial sites are carefully chosen and baseline data collected.

58. The Bank is involved with innovative attempts to expand education for women and girls in a variety of countries, including Morocco, Pakistan, Bangladesh, Indonesia, Kenya, and Ghana. This should improve our understanding of what works.

59. In the meantime, on the basis of available evidence and in response to considerable interest from Operations, the Education and Employment Division is preparing an assessment of "what works" to improve female education. This should be available by June 1990. It will be the basis for guidelines for women and girls. As experience accumulates, the education guidelines and this paper may require adjusting.

Women's Health

60. Many developing countries have made considerable progress in improving health, particularly of children, over the past 20 years. As discussed earlier, life expectancy in low-income countries other than China and India has increased from 43 to 52 years; including China and India, life expectancy is now up to 60 years (see table 1). Yet women's health remains precarious, particularly in poor countries. Women in industrial countries can expect to live 25 years longer than women in developing countries (excluding China and India); men, 19. As a start in assessing women's health, it is important to gather basic information on male and female life expectancy. Since women's "natural" life expectancy exceeds men's, a serious problem exists if men tend to outlive women. Age-specific mortality rates may provide important clues to the major threats to women's health. The most vulnerable periods are often infancy, early childhood, and the childbearing years. Deaths in infancy and childhood signal poor basic health and nutrition, which may be more acute for girls if girls are valued less than boys. Maternal deaths may signal a particular problem with maternal mortality.

61. The extent of maternal mortality. Most discussions of women's health in developing countries have focused on reproduction -- pregnancy, childbirth, child spacing, and lactation. Maternal mortality and morbidity still represent grave threats to the survival and wellbeing of women, at the height of their productivity and family responsibility, in much of the developing world. Maternal deaths now account for one-fourth to one-half of all deaths of women of childbearing age in many developing countries. Of the 500,000 maternal deaths each year, 99 percent occur in developing countries. "Safe motherhood" is a major concern that can also be an effective "wedge" from which to expand attention to women's broader health needs.

62. In poorer countries, women often run 50 to 100 times greater risk of dying in pregnancy than do women in developed countries. The extent of maternal mortality reflects the risk of death that a woman faces each time she becomes pregnant (the "maternal mortality rate") and her exposure to those risks (how many pregnancies she has during her lifetime). Risk varies, of course, for individual women. Generally risks are higher for very young women or those over age 35; for women in their first pregnancy or after four pregnancies; for women with certain pre-existing health conditions; for poor, malnourished, and uneducated women; and for women beyond the reach of adequate health care.

63. About three-fourths of maternal deaths are direct obstetric deaths, largely from hemorrhage, severe infection, obstructed labor, toxemia, and complications from abortion (usually from primitive illegal abortions). Other problems such as ectopic pregnancy also cause considerable mortality. Moreover, when the mother dies, the odds of her young children surviving diminish sharply. In addition, an estimated 8 million women each year experience nonfatal pregnancy-related complications, including permanent disability and chronic health problems. Yet about half of these maternal deaths and much of maternal morbidity could be eliminated within a decade through relatively low-cost measures in most countries (Herz and Measham 1987).

64. Other health problems. Women are not only childbearers. They are producers as well as reproducers, and play major roles in their national economies and the wellbeing of their families. Their most pressing health needs often relate to but extend well beyond their reproductive roles. And women are more vulnerable than men to certain conditions. Malnutrition affects both sexes, for example, but women have special nutritional requirements. Because of routine blood loss associated with childbirth and menstruation, women in the reproductive age group need three times more iron than men but are instead far more likely to be anemic. Women who are lactating need several hundred more calories and increased liquids daily to maintain their own nutrition. Yet in some societies, women are expected to eat last -- and sometimes to eat less nutritious foods as well. Among children, where boys are more valued than girls, preferential feeding of males often begins with weaning. Chronic malnutrition in girls can lead to stunted growth and small pelvic structure which in turn inhibit childbearing, particularly when childbearing begins in the teenage years before female children have reached their full size. (Nutritional issues are discussed more fully below.)

65. Differential risks can also be seen in such parasitic infections as schistosomiasis and malaria. Women sometimes have higher levels of schistosomes than men because their normal activities expose them much more to infected water. It is primarily women who wash clothes, gather drinking water, and stand in irrigated fields to transplant seedlings. Higher parasite counts lead to greater blood loss. Parasites can also destroy many red blood cells in the later stages of malaria. Thus schistosomiasis and malaria particularly threaten women, because of the links with anemia and blood loss associated with childbearing and menstruation. Such health problems are often dealt with through primary health care or vertical programs that could often benefit from more thorough analysis of beneficiaries' views and constraints.

66. Of course women's reproductive health problems range beyond the usual concerns of pregnancy, childbirth, child spacing, and lactation. High levels of various sexually transmitted diseases (STDs) are reported in both sexes, but in women their complications are more extensive and devastating. These complications include pelvic inflammatory disease, which may cause infertility and spontaneous abortion or other complications of pregnancy. Women are more vulnerable than men to infertility, and often suffer the consequences more acutely. The highest levels of infertility are found in parts of Africa, in association with STDs. Infertility can also be associated with postpartum and postabortion infections, female circumcision, and endemic parasitic diseases. In some societies, particularly where a woman's value is closely tied to her childbearing role, an infertile woman may be rejected by her husband or her family, forced to turn to prostitution or become destitute, and even denied customary burial. AIDS is an increasing threat to women, particularly in Africa, as it spreads to broader urban and rural populations. Because of their greater difficulty in obtaining information generally, women may remain ignorant of AIDS-related risks. The increasing tendency for men in some countries to migrate to cities and return home only after some months may exacerbate the spread of AIDS. Adequate provision of information and condoms to help prevent infection can be an important means of protecting women.

67. Female circumcision reportedly affects some 75 million women and children. The short-term morbidity associated with female circumcision -- which has no known medical benefits -- includes shock, severe pain, bleeding, infection, urinary dysfunction, and damage to surrounding organs. Especially where the more radical forms (infibulation) are practiced, longer term consequences can include pain, scarring, obstructed menstrual and urinary flow, chronic infection, obstetrical complications, and lasting psychological trauma. Some women are actually given incisions and reinfibulated with each delivery (Ausen 1977; Belsey 1976; Mahran 1981; IPPF Medical Bulletin 15-2).

68. Linking maternal and child health. A woman's health and nutritional status substantially affect her capacity to withstand difficulties during pregnancy, childbirth, and her postpartum period; her capacity to produce a strong, healthy baby; and her capacity to nurse and care for her baby. Babies with low birth weight are more disposed to death and illness than heavier babies. Low birth weight may result from either short gestation or retarded growth in utero. Short gestation, or premature birth, is the most common reason for low birth weight in industrialized countries, but retarded growth in utero is more common in developing countries. It is associated with the nutritional status of the mother -- particularly her pre-pregnancy weight, her nutrition during pregnancy, and her stature (reflecting her own nutrition as a child). When an infant dies, a lactating mother stops her lactation sooner than otherwise. Ovulation then resumes prematurely, and she is more likely to become pregnant again before she has had time to recover fully from the last pregnancy. The next baby may be born weaker still, and a vicious circle of malnutrition, disease, high mortality, and high fertility ensues. Of course the mother's health and strength also affect the care she is able to give to her children:

> Women cannot effectively work toward the Child Survival and Development Revolution if they themselves are too overworked, malnourished, and sick to deliver and raise healthy babies. A woman's existing workload, in both its daily and seasonal dimensions, largely determines time available for growth monitoring, immunizations, preparation of weaning foods, and routine child care. A woman's status in the family, itself dependent on personal income and education, greatly affects food distribution and decision-making about health care (Stinson 1986).

69. These links between maternal and child health may be perpetuated over generations through the interplay of social, cultural, economic, and biological forces. Women may not realize that most pregnant women in developing countries are anemic. They may realize the implications of, but feel helpless to prevent, pregnancy among teenage mothers who are not yet fully grown. Many women could help themselves if they had basic information about nutrition and health; but they lack both the information and the resources to use it. Improving the income, education, health, and nutritional status of women, therefore, can help substantially to reduce maternal mortality and morbidity. As discussed earlier, women's education and economic standing equip them to care for themselves and their children -- to obtain needed food, health services, transport, and the like. In more restrictive cultures, women may need a male relative's permission even to seek health care in an emergency. As women's education and earning

capacity improve, their capacity to act on their own behalf also usually increases -- except in a few countries where traditional restrictions on women persist even as incomes and education increase.

Promising Approaches for Safe Motherhood

70. Specific efforts to address maternal health and morbidity (including broader aspects of reproductive health) could have swift, substantial effect. They could also act as a wedge toward more effective efforts to deal with malnutrition, infectious diseases, problems associated with aging, and other broad health concerns. Precisely what is needed will depend on individual country circumstances -- on the pattern of maternal mortality and morbidity, its underlying causes, existing health care, and resource constraints.

71. Getting started. The first step is to collect basic information on childbearing -- age at onset, age-specific fertility rates where available, estimates of maternal mortality and its causes, and so on -- and relate these to such background variables as income, education, culture and location. (see annex on statistical indicators.)

72. Core requirements. These include:

- Better prenatal care.
- Better screening of pregnant women to identify more of those likely to face severe problems.
- More effective help with delivery.
- Improved family planning services.

Three essential requirements for expectant mothers are routine care prevention of complications, routine care, and backup for high-risk and emergency cases. Much maternal mortality and morbidity can be prevented by pregnancy risk screening, referral for special care of women at high risk, and good prenatal care and help at delivery for all. Current evidence, though limited, suggests that it is possible to identify the one-fourth or so of pregnant women who will have about three-fourths of the life-threatening complications of pregnancy. It may be especially important to find simple screening tests to identify problems in women who did not appear to be at unusually high risk at the start of a pregnancy -- such as serious swelling, convulsions, or bleeding. With risk-screening and selective referral, scarce health resources can be focused on those with greatest need. Adequate care for women with supposedly routine pregnancies is equally essential (Herz and Measham 1987).

73. To provide the necessary preventive, routine, and backup care, a three-pronged approach is required:

- Stronger community-based health care. Such health care relies on non-physician health workers drawn from the local community to screen pregnant women, identify those at high risk, and refer them for help; provide good prenatal care and ensure safe delivery for women at less risk; provide family life education, temporary family planning services, and referral to clinics; and generally to promote better family health and nutrition.

o Stronger referral or backup facilities -- hospitals and health centers with beds -- to act as a backup network, to take better care of complicated deliveries and obstetrical emergencies, and to provide clinical and surgical methods of family planning.

o An "alarm and transport" system to quickly transfer women with high risk pregnancies and emergencies from the community to the referral facilities (Herz and Measham 1987).

74. These maternal health and family planning services would normally be built into government or nongovernment programs of primary health care. Their cost will vary, and research is needed to refine the types of interventions that will be most cost-effective, considering variations in social and economic circumstances, the education of both spouses, and the physical environment.

75. Family planning and women's health. Family planning services and information can improve maternal and child health by enabling women to time and space pregnancies. The effect of child spacing on child survival is well known. Less well known are the effects on maternal health. In many countries, from one-fourth to half of maternal deaths could be averted just by avoiding unwanted pregnancies (Maine 1986). Family planning does involve some medical risks. Every effort should be made to explain and deal with those risks and improve methods of family planning for both men and women. But with current methods, family planning is far safer than bearing children repeatedly. For every 100,000 births in Africa, for example, anywhere from 200 to over 1,000 women die, depending on the country and area (WHO 1987). For every 100,000 women taking the contraceptive pill for a year, only one is likely to die (World Bank 1986). These estimates are not strictly comparable as women using no contraceptives do not bear children every year. But they show the enormous difference in the basic scale of risks associated with childbearing and family planning in the circumstances facing most women in developing countries today. Experience from diverse settings suggests that when safe, effective, and acceptable family planning services are provided, from one-fourth to two-thirds of couples choose to use them (see discussion of approaches to family planning in later section on population growth). Relatively more is known about cost-effective approaches to family planning, as discussed below in the section on population. It is important to provide -- and explain -- a variety of methods suited to young women wishing to delay the onset of pregnancy, to young mothers wishing to space births, and to older women who already have all the children they want. It is also important to make family planning services available through a variety of channels, including some close to home. (See section on population.)

76. Innovations in maternal health. More experimentation is needed on prenatal care, help with delivery, and followup. One dilemma is that the largest absolute number of maternal deaths occurs among women who are apparently at low risk. Relatively few women fall into the high-risk groups, such as pregnant teenagers or older women with five or more children. So many low-risk women are pregnant that they account for most deaths even though each individually faces strong odds of survival. Thus reducing maternal deaths will

require reaching many women, not just targeting on a few. Key questions for research include the following:

o What is the potential for improving the capacity to predict which women will develop serious complications of pregnancy?

o What kinds of "danger signs" can women themselves learn and watch for -- such as bleeding, seizures, or serious swelling? These may help especially to protect apparently normal women who do not qualify as "high risk."

o How much can the community participate in its own health care?

o What is the proper role of the front-line health care workers in the community?

o How much can the responsibilities of traditional birth attendants be expanded?

o What is the capacity to improve referral facilities at modest cost?

o What is the potential for establishing and expanding low-cost "maternity villages" or waiting homes?

o What is the potential for innovative alarm and transport systems?

o The problem of hemorrhage, a life-threatening emergency, is particularly challenging. How much can traditional birth attendants (TBAs), nurses, or midwives accomplish without intravenous capacity, how can intravenous capacity be expanded, and what are the implications for clean blood supplies particularly in areas with a relatively high incidence of AIDS?

o How can iron supplements, better nutrition, and more effective control of malaria reduce anemia and therefore decrease the risk of life-threatening hemorrhage?

o How much can the incidence of infection be decreased through relatively simple, low-cost measures to improve hygiene at delivery, and how can frontline health care providers deal more effectively with infections?

o How can the incidence of septic abortion be reduced?

o How many obstructed labors can be predicted from the mother's stature (and age)? These are among the questions needing attention. Many promising approaches are ready to test (Herz and Measham 1987; WHO 1987).

77. The limited evidence suggests that about half of all maternal deaths could be prevented by spending under $2 per capita per year -- an expenditure many countries already make in part. The marginal increase needed to achieve results is likely be modest in many cases. It will be used not to establish a separate, vertical maternal health program, but to stengthen the maternal health (and family planning) dimensions of existing primary health care and related factors

such as commercial sales of medicines or contraceptives. Measures outside the health system, including formal and nonformal education and improved earning opportunities for women, can also improve maternal health by encouraging women to seek health care, improving their well-being and self-esteem, and encouraging communities to give greater priority to maternal health and family planning.

Women's Nutrition

78. Frequent childbearing and poor nutrition combine to weaken maternal health, harm reproductive outcomes, and diminish women's strength and efficiency in market, household, and child care activities. Improving women's nutritional status should improve women's health and increase productivity in both household and market activities.

79. Women are often exhausted by the combination of reproductive demands, heavy workload, and inadequate diet (Hamilton, Popkin, and Spicer 1984). Since pregnancy and lactation increase nutritional requirements, women are considered to be under "possible nutritional stress" at these times. In Africa, women spend from one-third to almost half of their reproductive years pregnant or lactating. In Asia that figure varies from about 60 percent in Bangladesh to 50 percent in Pakistan, 40 percent in Indonesia, and just over 20 percent in Malaysia. In Latin America, only about 22 to 35 percent of the reproductive years are spent pregnant or lactating.

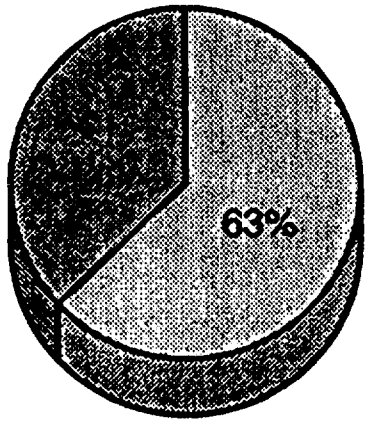
80. Careful, systematic analysis of women's diet and nutritional status is rare. Data from small-scale studies of women's anthropometry, iron status, and dietary intake suggest that they are at high nutritional risk, but far more research is needed (Hamilton, Popkin, and Spicer 1984). One thing is clear: anemia and sheer caloric intake are pressing problems.

81. Anemia. Anemia is defined as a substandard concentration of hemoglobin in the blood and/or deficient red blood cell count. As noted earlier, iron deficiency anemia is a particular threat because it reduces work capacity and increases fatigue and the risk of hemorrhage and death in childbirth (Edgerton and others 1979; Spurr and others 1984). Most women in the developing world are anemic, largely because of inadequate iron intake and excessive blood loss due to parasites, menstruation, and closely spaced births. (Among other problems, malaria produces severe anemia.) In Africa, for example, three of every five pregnant women and two of every five nonpregnant women are anemic. In South Asia, two of every three pregnant women and over half the nonpregnant women are anemic (see figure 2). Anemia occurs two to three times more frequently in nonpregnant women than in men, and up to 20 times more frequently in pregnant women (Buchanan 1975).

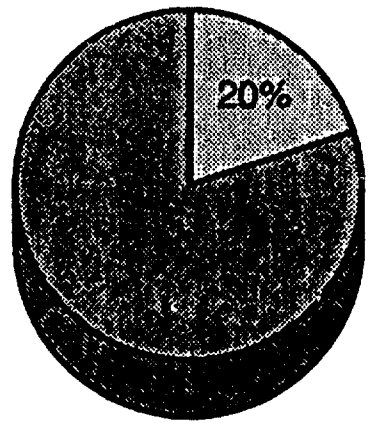
82. Dietary intake. Caloric intake is often low among women (see table), regardless of physiological status. In a few studies, pregnant women actual consume less than nonpregnant women; in other studies they consume more than they should. Lactating women generally consume more than their non-pregnant counterparts, as they should, but not enough to meet their increased requirements. Where caloric intake is reported by income level, low-income women appear to consume less. Women generally meet a smaller percentage of

FIGURE 2

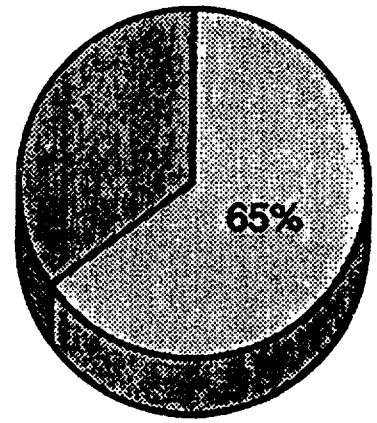
Prevalence of Anemia in Pregnant Women



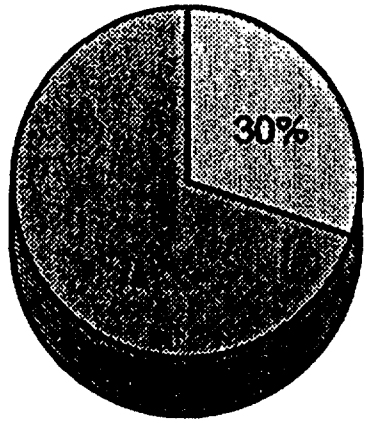
AFRICA
11.3 Million



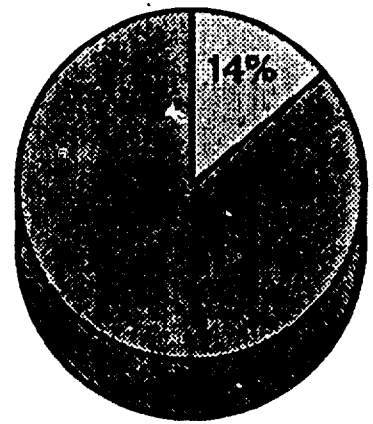
EAST ASIA
0.5 Million



SOUTH ASIA
27.1 Million



LATIN AMERICA
3 Million



DEVELOPED COUNTRIES
2 Million

Source : WHO

their current recommended daily requirements than men (Bleiburg and others 1980; Florencio and Aligaen 1980).

83. Protein intake appears to be more adequate than caloric intake in most countries. But figures reported do not take into account that when calories are deficient, the body will use protein to compensate and produce energy. Moreover, the quality of protein is seldom reported. "Incomplete" protein, which lacks some of the amino acids that the body cannot synthesize itself, is of lower quality. Women often consume lower quality vegetable protein, while men receive the larger share of whatever (higher quality) animal protein is available. A study from Burkina Faso, for example, shows women consuming only .8 grams of animal protein daily compared to men's 10.3 grams. (Women also consumed less of all kinds of protein.) Women's vitamin and mineral intakes show similar absolute and relative shortfalls relative to men's (Hamilton and others 1984).

84. Anthropometric data. Studies are rare but suggest that women's weights are generally more adequate than their dietary intakes -- but still far below WHO standards. Women in Africa and Asia are particularly short. Shortness and deficient stores of fat reflect their poorer diets. Weight gain during pregnancy is a critical indicator of pregnancy outcome, particularly the baby's birth weight. The average pregnant woman in Europe and the United States gains 10 to 12 kilograms. Studies in several low-income countries report average pregnancy weight gains of only 2 to 7 kilograms (Hauck 1963; Thomson and others 1966; Venkatchalam and others 1960).

Promising Approaches in Women's Nutrition

85. Creating demand. To improve women's nutritional status, women themselves must be convinced of the need. In many circumstances, creating demand is as important as providing service.

86. Women's lack of self-confidence is a major impediment to the success of maternal and child health programs (Griffiths 1988). It often shows up as "silence" or extreme denial of self and dependence on external authorities for direction (Belenky and others 1986). Women fee. reluctant to seek help for themselves or their children -- whether prenatal care, family planning, health care, education, or wages. In some societies where women are not encouraged to think for themselves, authority figures have helped persuade women to seek health or family planning services, continue breastfeeding, and so on. Women with more self-confidence have been more willing to take the steps needed to improve child nutrition and find effective treatment of acutely undernourished or malnourished children (Griffiths 1988).

87. Feeding programs. Supplementary feeding programs in India, the Philippines, the Gambia, Guatemala, Canada, and the United States have successfully raised birth weights of infants born to high-risk women. Presumably they also improved maternal nutrition, though that question has seldom been addressed. To improve the odds of success, the food supplement should be provided conveniently and close to home. It should cost little in time or money and should accommodate traditional beliefs. To supplement the

diets of pregnant women, it may be necessary to address their actual or perceived risk of obstructed labor from large infants (Hamilton, Popken, and Spicer 1984; Brems and Berg 1988).

88. Supplementary iron during pregnancy is a virtually universal need of pregnant women in developing countries. Vitamin B12 deficiency in pregnancy is another significant cause of anemia in pregnant vegetarians who are undernourished. Counselling and education may be needed to encourage women to keep taking the supplements, which can cause annoying side effects. Ideally, women's diets should be improved well before pregnancy begins. Pregnant women improved their nutritional practices in Indonesia after a communications program carried out under a Bank project. Information and education programs offer considerable potential in this regard.

89. Nutritional interventions for women may have to start before adolescence to improve maternal height, particularly when childbearing begins before young women are fully grown. In areas where gender bias influences the mortality, morbidity, and nutritional status of women and girls, efforts should be focused on increasing demand for good female nutrition -- through improved employment opportunities for women, reformed marriage customs, or increased female education, for instance.

90. Operational research. Knowing what women need is one thing; delivering it to them and convincing them they need it is quite another. Research is needed -- to raise demand, increase sustained participation, and enhance effectiveness. In particular, new ways should be tried to build the self-confidence mothers need to adopt new behaviors and participate actively in maternal and child health and family planning programs.

PRODUCTIVE EFFICIENCY

91. Expanding investments in human capital for women will help in the longer run to integrate more women into the economy and improve their opportunities. Meanwhile, in the shorter run it is important to consider ways to help the current generation (particularly poorer women) produce and earn more. The economic argument is straightforward. An economy cannot run efficiently if half of the adult population has less access to information and the means of production and so faces more restricted choices.

92. Cultures vary but particularly in very traditional societies, women tend to concentrate on functions performed for the family, or within or near the household, whereas men are usually encouraged to move outside to more nontraditional activities. This "inside-outside" dichotomy holds more true for some cultures than others, but it is common -- perhaps because it has its roots in women's maternal role. Opening up information and the means of production to women can help them consider a wider range of "inside" and "outside" choices and find where their true comparative advantage lies.

93. Broader choice is a source of efficiency, as international trade theory so clearly demonstrates. The argument for broader options for women is analogous. Some anthropological studies also emphasize that improving income-earning capacity strengthens women's bargaining position in the family, whic helps them reach beyond the traditional sphere.

For rural women,

> the need to use income generation as an entry point can hardly be overemphasized.... Unless the time women spend away from the household and agricultural chores can bring some visible contribution to the family income, neither they nor their households will feel the time is justified.... Whether the concern is to accelerate growth or to achieve equity within the household, it is important to support the tradition of female entrepreneurship where it exists and encourage its development in the highly dichotomous communities where women have in the past been discouraged from market participation. (Acharya and Bennett 1982)

The reason is plain:

> Women's involvement in market activities gives them much greater power within the household in all aspects of household decision-making. At the same time, limiting women's involvement to domestic and subsistence sectors reduces their power vis-a-vis men.... Money earned is highly individualized [and allows] women to make a measurable contribution to household income and thus enhance the perception of women as equal partners. (Acharya and Bennett 1982)

94. Tradition and culture thus often limit women's access to information and technology, education and training, credit and resources, jobs and product markets. Factor and even product markets often operate more rigidly, and less efficiently, for women than for men. Women may face discrimination -- whether overt or covert, intentional or not -- in these markets. Women's "choices" on work and childbearing may thus be based on more restrictive options than is apparent at first glance.

95. Economic analysis based on a "representative" economic agent in any market is justified only if all agents within that market are homogeneous. It is misleading and can generate inappropriate advice if it masks discrimination which in fact segments a market into submarkets that behave quite differently. Separate segments ought to be considered separately. Estimating the extent and cost of discrimination is methodologically complex, of course, because of the interdependence of explanatory variables and bias arising from unobservable traits and self-selection mechanisms (Schultz 1989). For operational purposes, one should first recognize the possibility that markets may operate differently for women and then roughly assess how much so. Then one can identify workable approaches to reducing segmentation and improving the operation of the entire market. In the longer run, human capital investments help women break out of traditional molds, move outside the family, behave more like other economic agents, and so reduce market segmentation. In the shorter run, programs to bring information and resources closer to women can help them break out (Schultz 1989; Acharya and Bennett 1982).

Equipping Mechanisms

96. For small-scale female farmers, self-employed women, or women working in small enterprises or services, factor markets often operate more rigidly than for men. Many of these women are poor. Women have less access to, and higher effective costs for, information, technology, inputs, and credit. This is especially true in the earlier stages of development and in restrictive cultures where most women are confined to the "inside". Women's capacity to cope in these markets may be hampered by their earlier shortfalls in education and training and by poor health, a shortage of assets, and lack of information and services to control pregnancy (Bevan and others 1988; Schultz 1989). Women often have trouble traveling to reach factor or product markets. As a result of all this, policies instituted in product markets to increase producer incentives -- such as higher prices or lower taxes -- may not elicit the desired response.

97. "Equipping mechanisms" -- programs to equip women to operate more effectively in factor and product markets or to directly provide information and resources to women -- can be cost-effective ways to improve economic performance and increase food security. Essentially, these programs help women move toward the "outside" or bring the "outside" in to provide help with home-based activities. Parents have the primary voice in deciding whether daughters attend school, but women have more say over whether they will avail themselves of equipping mechanisms -- although husbands and other family or community members still considerably influence (and in restrictive cultures determine) their choices. The question to the woman and her family is whether such a program's likely benefits outweigh its full opportunity cost.

98. The policy issue is a dual one: first, to design programs involving women that represent cost-effective approaches to reach such development goals such as improved economic performance and food security; second, to persuade women and their families that these programs are worth trying, so they take full advantage of them. Among the "equipping mechanisms," agricultural extension and credit for small-scale farmers and entrepreneurs are emerging as key policy instruments. Research on equipping mechanisms is scarce, however. Others may well emerge in the next few years if research and experimentation expand. And our understanding of extension and credit can also be improved through more experimentation.

99. Agricultural extension. Many women farmers, particularly in Africa, own or manage their own smallholdings. In most regions, women also take responsibility for such key tasks as transplanting, weeding, and post-harvest processing. Programs to supply agricultural extension and credit are typically undertaken when existing factor markets provide inadequate information and capital (Schultz 1989). But as designed, these programs often fail to reach women. To do so may require more imagination and effort. Even when women are actively involved in major cash or food crops, for example, agricultural extension programs may focus on male farmers, assuming that men will pass information along to their wives. Studies in Asia, Africa, and Latin America show that such transmission of information is often poor (Berger and others 1988; de Beyer 1988; Lycette 1986; World Bank OED 1988a, 1988b; World Bank 1989a).

100. Examples range from maize production in Kenya to cotton production in Togo, from rubber production in Malaysia to rice production in India (see box). Extension also typically focuses on major crops or on particular cash crops controlled by men, neglecting fruits and vegetables or small livestock controlled by women that play an important role in family nutrition but provide little income (Berger and others 1988; World Bank OED 1988b). Female farmers may thus have more difficulty learning about and instituting new farming methods. This can affect their productivity in traditional types of agriculture and hamper their ability to move toward new lines of agricultural activity.

BOX: 10

Agricultural Extension That Misses Female Farmers

Rubber in Malaysia: About 75 percent of "settler wives" spend 5 to 6 hours daily tapping rubber trees and 40 percent help with maintenance. But extension services work systematically only with male settlers. Women settlers wanted extension and reported they would have no problem with extension visits from male extension officers. Women were successfully trained in rubber tapping with much success in Cote d'Ivoire.

Source: World Bank OED, "The Jengke Triangle Projects in Malaysia," 1988.

Cotton and Food in Cote d'Ivoire, Togo, and Burkina Faso: The introduction of cotton improved men's incomes. But it increased women's work at the expense of their traditional endeavors and weakened their economic position. Cotton fields and the income derived therefrom are controlled by men, but women are obliged to work there. Hence, women in Burkina Faso gradually shifted away from work on their household plots -- only 10 percent of women report cultivating such plots. Women there now constitute about half of the agricultural labor force, provide 60 percent of the labor for mechanized production, and 35 percent of hired labor. By contrast, most women in Cote d'Ivoire and Togo still also cultivate household plots, primarily for food for home consumption but also for income. Women have more control over the income from those plots, particularly in Cote Ivoire, where they are gradually expanding the plots and growing more cash crops. On the whole, in these three countries, women supply 40 to 60 percent of the labor for agricultural activities. In the M'Bingue Region of Cote d'Ivoire, women provide 41 percent of all agricultural labor, including 67 percent of the labor requirements for groundnuts, 25 percent for rainfed rice, 90 percent for irrigated rice, and 44 percent for cotton.

In Burkina Faso, women have some access to extension and credit through small-scale programs involving development/extension agents and women's groups. But in Togo and Cote d'Ivoire, where women are more active in cashcropping and other production on their own plots, they lack access to extension (except for a special program for rubber in Cote d'Ivoire). They can get access to inputs only in Togo. "If women as cultivators have no direct access to extension services, one of the principles of the methodology used in all three countries -- the feedback from the farmer to the research center -- is unlikely to occur."

Although women work more in the "family" cotton fields, men control the income from cotton, and women lose income by putting less time into their household plots. Reduced access to the household plots affects the status of women and their daughters -- these fields are often a source of food and income for school fees, clothing, and medical supplies. They are often important to the survival of polygamously married women and their children in the dry season, when the output from the family fields is exhausted. Loss of income from this source is not made up by revenues from the family fields -- the proceeds from which are often allocated to the purchase of another wife, a mobylette, or a

radio. In Burkina Faso, which has the highest incidence of polygamy, the introduction of cotton has reportedly contributed to an increase in polygamy. Mechanized producers have an average 2.5 wives; those with animal traction, 2.1 wives; and manual cultivators, 1.7 wives. In Burkina Faso, women have had to make up the loss of earnings from their household plots by secondary activities. The survey shows that almost all activities that yield supplementary income -- such as the labor requirements for processing of groundnut oil, karite butter (65 percent), and beer (32 percent) -- are undertaken by women. Revenue from individual fields accounts for 26 percent.

Source: World Bank OED "Cotton Development Programs in Burkina Faso, Cote d'Ivoire, and Togo," 1988.

Livestock in Burkina Faso. A village livestock project in Burkina Faso failed because the information and resources to improve the production of small livestock were directed at men, although women were responsible for most of the small livestock (sheep, goats, and poultry). Resources and knowledge about small livestock did not "trickle over" from men to women as expected. Men did not give the women the resources they needed to improve livestock production.

Source: Carloni 1987

Promising Approaches in Agricultural Extension

101. In delivering extension services to women, several key points could be considered as a start:

a) It is probably more sensible to adjust the existing system to reach both female and male farmers than to establish a separate extension system for women farmers.

b) Diagnosis: Women farmers are not homogeneous. What do the main groups of women farmers focus on? What extension advice is offered? Does extension cover only "main crops" or cash crops? Are these important to key groups of women, and should extension advice be adjusted to cover other crops, animals, or topics (for example, food storage, food processing, cooking, or nutrition) that especially concern women farmers?

c) Delivery: Considering the position of various groups of women in the family, society, and economy, how can extension advice be delivered affordably and effectively to both male and female farmers? How important is mere proximity of the information source as distinct from mode of delivery? Do women have more difficulty traveling? Under what circumstances can women talk with male extension agents, or do women farmers have to work with women extension agents? What is the potential for using women's groups? What influence does the basic education of the farmer (or her husband) have?

d) How can feedback be assured from women farmers through the extension system to researchers who can then improve the extension advice?

e) What will be the likely financial and administrative costs and impact: of extension -- the immediate impact (farmers reached), the intermediate impact (the adoption of advice), and the full impact (changes in productivity and income)? How does this vary by social and economic background, education, farm size, and income level?

102. Rigorous research based on household surveys or similar evidence is scarce on these questions -- especially on question e), for extension as a whole -- so the greater scarcity of research on extension for women is not surprising. Literature searches and existing research suggest that the evidence available on extension for women comes largely from program evaluations or limited surveys of extension users (Berger and others 1984; de Beyer 1988; OED 1988a, 1988b; World Bank 1989a, 1989b; Evenson 1989 forthcoming). Additional research is now underway (for example, through a UNDP-financed project being executed by PHRWD in cooperation with the Africa Region), but much more operational research is needed to determine cost-effective approaches to delivering extension and their probable impact.

103. Women's needs. Available research indicates that women often have a broader range of concerns than men. They often grow a wider variety of crops, as they provide for the family and sometimes the market as well. They also often tend small animals, and veterinary services are sometimes not covered by extension systems that focus on crops. Women also have a variety of household chores and family concerns, especially nutrition. Such extension as has been provided for women has often focused on "home economics," covering some of these issues. No doubt useful extension advice can be provided about home-based tasks, particularly the time-consuming ones. But "home economics" advice, like other extension advice, must be practiced. It may be sensible to integrate advice on agriculture with advice on home economics but system overload is a real threat when programs try to "advise on everything."

104. Delivery systems. Two points deserve considering as a start: whether women can receive advice from male extension agents, and whether women can be reached effectively in groups. Several studies suggest that in many cultures, female farmers prefer working with female extension agents. In almost any culture, female agents can help inform their male colleagues about the special tasks of female farmers. But almost all extension services are staffed primarily by men, except for a comparatively small group of "home economists," and as a practical matter they will be for some time. Extension programs are already expensive, and it is unrealistic to expect to adjust staffing patterns more than gradually. The question is, what may the "optimal mix" of male and female agents eventually be, and what can be done in the meantime to bring extension to today's female farmers?

105. In many cultures -- in Kenya, for example, and parts of Nigeria and Mexico -- women can generally work with male agents with no difficulty. In some cultures they can do so in carefully defined circumstances (for example, in groups or with the approval of local leaders or after an appropriate introduction). And in some relatively restricted cultures -- for example in Yemen and Northern Nigeria -- they must be served by female extension agents. In those cultures, however, it is also often difficult to develop a cadre of female agents and to post them in rural areas. The same cultural constraints that require women to speak only to women agents discourage women from seeking employment as agents who must travel. But many extension services are gradually adding female extension agents, and even where women farmers can work with male extension agents, this may be a sensible step. The female agents do seem to work more easily with women farmers in many areas: if only a few female agents are available in the near term, one possibility is to use them especially to introduce extension (and male agents) to women farmers. Female agents do inform their male colleagues in extension about the needs of women farmers. One possibility is to include women as specialized advisors or "subject matter specialists" on WID to back up the front line agents with help on issues of particular concern to women.

106. Women's groups. Evidence is sketchy but suggests that it may often be cost-effective for extension agents to work more with women's groups -- agents can reach women cost-effectively in groups of 10 to 20. In many parts of the world, certainly including Africa and parts of South Asia, women traditionally form such groups to work on a variety of problems (for example, to learn health

care or earn income to finance weddings, water supplies, or improved housing) and to provide a support network. In Kenya, such groups work regularly with extension agents. Men are more reluctant to meet in such large groups, so that it appears that the Kenyan extension service could double its reach and actually reduce costs by working more with women's groups, as extension agents could spend more time teaching and less traveling. Moreover, the groups seem to provide a spirit of solidarity that reinforces the willingness to adopt new advice; they are reportedly good adopters (World Bank 1989a; Benor 1988 Annual Meetings Presentation). Since women are the core of Kenyan smallholder agriculture and manage perhaps two-fifths of the small farms, this possibility is attractive to the government. There are questions about working with women's groups, of course. Groups may not meet regularly, may be poorer than average and so less able to adopt advice (or, on the other hand, a useful channel for reaching the poorest), may not be influential farmers, and so on. But they appear to be worth serious consideration.

107. Links to research. From the sketchy information available, it appears that few links exist between female farmers and the research institutions developing extension advice. Indeed, one reason for the lack of information is that the questions are so seldom asked. Yet research is needed to ensure that extension advice on women's main activities is available, affordable, effective, and suitably delivered.

108. The Bank is now making a considerable effort to include women farmers more effectively in regular extension programs, in Africa (Kenya, Nigeria, Burkina Faso, Malawi, and Zimbabwe) and in such disparate countries as Mexico, India, and Yemen (see box). Research underway, particularly in Kenya and Nigeria, should provide additional information on what works in the next two years. More detailed operational guidelines on "what works" to bring extension to women (including a special guideline for Africa) are being prepared by PHRWD in cooperation with Agriculture Department and the regions.

Credit and Entrepreneurship

109. One way to improve women's productivity -- especially poorer women -- may be to provide them with credit. Women receive very little credit. Agricultural credit institutions in many countries require title to land as collateral. If most land is registered in men's names and men are reluctant to borrow for their wives, female farmers may lack credit even if they work much of the land and choose what to grow and market. Available evidence, though limited, suggests strongly that this is often the case (Safilios 1985; Hossain 1987). In Kenya, for example, women manage about 40 percent of the small farms at the core of Kenyan agriculture but receive fewer than 10 percent of formal loans, and their husbands are reluctant to borrow on their behalf (Kenya Wid Strategy; Staudt). Literature searches indicate little systematic experimentation or rigorous research on providing credit to women smallholders, although a number of nongovernment organizations and governments have tried various approaches on a small scale (Schumacher and others 1980). PHRWD is initiating work in this field, and several Bank projects (most at the preparation stage in Africa) envisage some innovative efforts.

110. Cooperatives may require title to land for membership in areas where men usually hold title, which may effectively deny many women access to the advice, credit, lower input prices, and marketing assistance that the cooperatives offer (World Bank 1989a; de Beyer 1988). Few operational efforts include measures to try explicitly to increase women's participation in cooperatives, and there is little evidence on "what works" or associated costs.

111. Female entrepreneurs working in small-scale industry or business also have particular difficulty. The policy and regulatory environment tends to dampen small-scale entrepreneurs' (SSEs') incentives to produce (whether or not they are women). It may also leave SSEs, especially women, at a disadvantage in obtaining the information and resources they need to produce efficiently. Small-scale entrepreneurs may lack access to markets, for example, or larger firms may have easier access. Small-scale entrepreneurs may lack the training in management and accounting to maintain a business or the skills to cope with official red tape or unofficial harassment. They may thus have more difficulty cutting through the bureaucracy to get import licenses, foreign exchange, or operating licenses. (This may be particularly true of women, because of their relative lack of education or their relatively greater cultural restrictions). Or larger and more influential firms may simply be given special breaks in obtaining licenses or access to markets. Small-scale entrepreneurs may not be well enough organized or equipped to communicate effectively with professional organizations that supply information on improved technology -- they may be weak at "networking." Women especially may have difficulty obtaining credit (Lycette 1984). Cultural traditions and family responsibilities may keep women close to home, making it more difficult for them to get training or inputs or to sell products (World Bank 1989a, 1989b, 1989c). Management training may be a priority.

112. From an economic point of view, of course, measures to enable small-scale entrepreneurs to compete and operate efficiently can be attractive. They encourage private initiative and marshal private resources for investment. They can also encourage more appropriate factor proportions in countries where labor is relatively abundant: SSEs tend to be more labor-intensive and are often more willing to pay higher interest rates (or perhaps just less able to exercise the influence needed to get lower rates) (Marsden; Levitsky; Barry; Steel). Small-scale enterprises also provide much of the additional employment now being generated in many developing countries, and the cost per job created tends to be substantially lower in smaller enterprises.

113. The small-scale or informal sector and the related issue of providing credit to borrowers ranging from small-scale entrepreneurs to the very poorest or assetless people in rural or urban areas require much firmer understanding before reliable operational guidelines can be developed. Operational guidelines about women and credit and more broadly about the small-scale or informal sector will be developed by the Women in Development Division after considerable background analysis and project testing of innovations over the next two years.

BOX: 11

Agricultural Extension for Women Farmers In Kenya, Nigeria, and Yemen A. R.

Most women in Kenya are farmers. Agriculture is the core of Kenya's economy, smallholders are the core of agriculture, and women are the core of the smallholders. The national agricultural extension system Kenya is instituting is a model of a program that reaches both women and men. Based on the "training and visit" system, it features regular visits to farmers in their fields and strong links between the farmers, extension agents, and researchers who develop extension advice. In areas where extension reaches farmers regularly, yields of maize (the main food crop) have risen 20-40 percent (with wide variation). The effort is still recent, but a government study reports that about half of Kenya's extension agents work primarily with female farmers. Male agents in Kenya often prefer to work with women becuase they actually do the farming, make many day-to-day decisions, and willingly adopt advice. Having female agents helps, but male agents can usually work with women farmers if care is taken to respect cultural traditions. Some male agents who are accustomed to working with male farmers must be encouraged to work with women.

Kenya's experience demonstrates that groups of 15 to 20 women will meet regularly with extension agents, but that such large groups of men are reluctant to do so. The government believes that by working with more women's groups, extension could probably double its reach and reduce its costs through savings in agent travel and increased time on task. Results so far suggest that by reaching female farmers, the extension program has increased both women's income and food security by increasing agricultural output.

Source: World Bank, 1989a

Many women in Nigeria are also farmers, and the Government of Nigeria is also instituting measures to bring regular extension services to both women and men through a "training and visit" approach. Because of the wide variations in culture in Nigeria, the approaches taken differ considerably from place to place. In Imo and Kaduna states, for example, women who formerly worked in the extension service as specialists in home economics are being given agricultural training so they can work as regular extension agents with a broad knowledge of women's concerns. Female farmers can work more easily with male extension agents in Imo than in Kaduna, which will have to rely more heavily on female agents.

Source: PHRWD UNDP Project

In Yemen A. R., many women have begun to farm more actively since their husbands have emigrated to work in the oil fields of nearby countries. These women cannot work with male extension agents, so the Government is developing a cadre of female agents. Cultural restrictions make it difficult to post the female agents in rural areas so approaches are being developed to provide appropriate shelter and transport mechanisms for the female agents. It is much more difficult to bring extension to women in such circumstances.

Source: World Bank Yemen SURDP Project

Promising Approaches in Small-Scale Credit

114. In the meantime, suggestions for promising approaches to credit can be drawn from the Bank's experience in lending for small-scale enterprises, innovative credit programs (in Indonesia, for example), and non-Bank programs that reach the poorest women (particularly the Grameen Bank in Bangladesh and SEWA in India -- see box). It appears from these and similar efforts that poor women borrow to a limited extent through informal networks of kin or from moneylenders and often demonstrate a strong repayment performance. But ordinary banks and other lending institutions are often reluctant to lend to SSEs because of administrative problems in handling many small loans and the possible weakness of small-scale operators in the general economy. They are demonstrably reluctant to lend to women, who seldom have more than a modest fraction of credit from such institutions (Schumacher and others 1980; World Bank 1989a, 1989b; Hossain 1987). (This varies, of course, but only in Latin America do women often obtain as much as a third of the credit under SSE programs, and even in that region the situation differs by country and area.) Women can be good credit risks (often better than men) (Schumacher and others 1980; Hossain 1987). But women face all the usual problems of SSEs compounded by a relative lack of education and business experience, a legal and regulatory environment that may discriminate against them, collateral requirements they cannot meet because men tend to have official title to land and other assets even when women manage them, and cultural traditions that generally hamper women's enterprises (Schumacher and others 1980; Hossain 1987; World Bank 1989a, 1989b).

115. Varying cultural and economic circumstances will require different approaches. But in general it is important to consider whether the broad policy framework (laws, policies, and regulations) provides undistorted incentives to smaller enterprises and to women in particular. Overvalued exchange rates, for example, may reduce demand for goods produced by SSEs. Or does that framework unduly hamper the ability of SSEs, particularly women, to respond to whatever incentives exist? For example, production or location permits, foreign exchange quotas and licenses and other bureaucratic requirements may favor large-scale producers (especially educated or powerful men) who have the know-how and resources to cut through red tape. Small-scale entrepreneurs, especially women, may lack the ability to organize, to "group for scale", and so may lose opportunities to buy bulk inputs at lower cost or to share the costs of marketing assistance. Access to credit may be a particular problem.

BOX: 12

Grameen Bank in Bangladesh

The most extensive and best documented program for providing credit to the very poor is run by Grameen Bank in Bangladesh. As of August 1988, its 453 branches operated in about 9,000 villages, about 10 percent of all villages in Bangladesh. It had lent to some 413,000 borrowers or "members," mostly women. In 1982, about 39 percent of members were women. By 1988, about 84 percent were women, and they received about 70 percent of total loans. In 1988 and 1989, 97 percent of new members have been women, who received 79 percent of loans disbursed in that period. Despite concern that husbands or others would seize control of the loans, about two-thirds of the women used 90 to 100 percent of the credit themselves (with higher proportions among the poorer women).

To borrow from Grameen Bank, members form "solidarity" groups of five. Several groups join to form a center, which meets regularly and receives training in several aspects of development. Groups also help build self-esteem among members, who agree to such objectives as educating children, improving family nutrition and hygiene, and practicing family planning. Loans are given to members of the group in seriatim: the first to borrow must establish sound repayment records before the others can, and among poor people with few other options for advancement, preserving the group's reputation becomes crucial. Grameen Bank personnel visit prospective and current Bank members at home, since poverty and culture discourage travel (especially for women).

Loans are made to individuals, with no collateral: one member of a household may borrow, provided that she or he owns less than half an acre of cultivable land or assets not exceeding the value of one acre of medium quality land. In fact, fewer than 5 percent of borrowers come from households with more than half an acre of cultivable land. The loan bears an interest rate of 16 percent annually. The borrower may use the loan for any productive activity but must use it immediately, begin repayments in weekly installments right away, and complete repayment within one year.

About half of all loans to women through 1986, were for livestock and poultry raising, 31 percent for processing and manufacturing, and only 13 percent for trading and shopkeeping. By contrast, about half of the loans to male borrowers were for trading and shopkeeping, 19 percent for livestock and poultry raising, and 14 percent for processing and manufacturing. Less than 3 percent of loans were used for crop production by men or women. Loans averaged Tk 1686 for women and Tk 2798 for men. There are no data on previous access to credit, but very few Grameen bank members could borrow from ordinary banks in Bangladesh.

Repayment has been excellent. Bank records indicate arrears of only 1 percent after one year but do not disaggregate by gender. A small but random survey in five "Bank villages" and two control villages in 1984-85 reported only about 0.5 percent of loans overdue beyond one year after the date of disbursement -- 0.6 percent for female borrowers and 0.3 percent for male borrowers. Of the female borrowers, 81 percent had no overdue installments compared to 74 percent for male borrowers. According to Hossain and Afsar,

> The main factors behind the excellent recovery of loans may be (a) the genuine credit need of the poor, (b) the bank's ability to limit credit services to its target group, (c) the provision of loans for activities that generate regular incomes, and (d) the procedure of collecting repayments in small amounts through weekly installments. But most important...is the strict supervision by the bank workers of the loan utilization process and the pressure to repay the loan in time by fellow group members. (Hossain and Afsar 1988)

Survey figures indicate that the amount of working capital managed by an enterprise borrowing from Grameen Bank had increased by about 300 percent within 2.25 years. Investment in fixed assets was about 2.5 times higher for loanees with more than three years' membership compared to those who joined during 1984-85. The number of cattle owned per hundred borrowers increased from 61 before joining the bank to 102 at the time of the survey, an increase of about one-fourth yearly. Initial loans tended to focus more on productive lines. Later loans may focus more on housing, education, or other forms of basic consumption (which may have an enabling effect on production).

Grameen Bank loans have also helped generate employment. The labor force participation rate (workers as a percent of household members) increased from about 33 to 41 percent. The proportion of female workers was about 24 percent among Grameen bank borrowers compared to about 9 percent in the nonparticipating households in the survey villages.

The survey also found that the Grameen Bank members had about 50 percent more income than the target group in the control villages, and about one-fourth more than the target group nonmembers in the project villages. The increase in income was highest for the absolutely landless, followed by the marginal landowners, but the income of the nontarget group is lower in the project village than in the control villages and the difference is larger for the groups with more land. The project and control villages have similar endowments of land and male workers, but average household income is about one-sixth higher in the project villages. About 48 percent of the Grameen bank participants remain severely impoverished, compared to about three-fourths of nonparticipants in the target group in both project and control villages.

Constraints on expansion of Grameen Bank might include the potential market for nonfarm goods and services, maintaining a stable institution with high staff morale, and limiting the cost of operations (particularly the village-based outreach of the Grameen staff). The interest rate that borrowers pay is about 16 percent, comparable to other lending institutions in Bangladesh. For 1986, the cost of funds to Grameen Bank was about 21.7 percent, including a substantial subsidy since the Bank had a concessional IFAD loan. The cost of funds would have been 26.5 percent without the concessional funds. Thus the implied subsidy is about 39 percent at the actual cost of funds and about 51 percent at the opportunity cost. But Grameen Bank achieves much higher loan recovery rates than most formal credit institutions in Bangladesh, and the director believes the subsidy is necessary primarily to finance The Bank's expansion into new areas.

Sources: Hossain and Afsar 1988; Hossain 1987

BOX: 13

Credit for Women in Indonesia

Women participate relatively actively in credit programs in Indonesia, particularly to support trading -- where women now dominate. Although 61 percent of women worked in agriculture in 1971, only 54 percent reported agriculture as their primary activity in 1980. More women are shifting into trade and services: 45 percent of new jobs for women in rural Indonesia and 95 percent in rural Java have been in trade and services (compared to 39 percent and 50 percent, respectively, for men). Some 28 percent of all self-employed individuals and employers in rural Indonesia are women (42 percent in the trade and services sector). Two-thirds of women working in trading and services are independent entrepreneurs. Women constitute roughly one-quarter of borrowers under two small-scale credit programs: KIK/KMKP and KUPEDES. Women are a higher percentage of borrowers in nonbank financial institutions such as BKK (60 percent are women) and KURK (57 percent are women). Evaluations of repayment performance are, alas, still unavailable.

KIK/KMKP: With World Bank support, the Bank of Indonesia provides credit to commercial banks for investment loans (KIK, or kredit investasi kecil) and working capital (KMKP, or kredit modal kerja permanen). The loans may not exceed Rp 15 million and charge interest of 12 percent yearly. KIK loans may be granted for up to 10 years (4 years of grace); KMKP loans are for up to 5 years (one year of grace). 75 percent of the value of the loan is insured by government, and collateral equal to 50 percent of the loan is required. About 80 percent of the loans are for working capital. Women account for 23 percent of loans -- 31 percent of them for transport, 31 percent for "other," 22 percent for trade, and 18 percent for manufacturing.

KUPEDES: KUPEDES operates under Indonesia's largest commercial bank through 2,272 village branches, granting loans to all creditworthy small-scale entrepreneurs at market rates of interest -- 21.5 percent annually for fixed investment and 31.7 percent for working capital. The maximum size loan is Rp 2 million; the average loan, Rp 350,000. Ninety-five percent are for working capital, three-fourths for trading. To apply, a borrower must describe plans (loan officers help illiterate borrowers), post collateral (land or other assets) equivalent to the loan value, and find a cosigner.

BKK (Badan Kredit Kecamatan): Semi-independent institutions visit local villages weekly or biweekly and lend small amounts of money to borrowers for up to one year with very loose collateral requirements. Borrowers must obtain the signature of the village headman as a character reference. Interest rates, set to cover the costs of lending to small borrowers, range from 27 to 260 percent annually. Some 60 percent of borrowers are women. Petty trading is the primary activity of over half the borrowers, and farming the secondary activity for over half. About half of the borrowers own land, averaging 0.8 hectares. More than 60 percent of the borrowers have not completed primary school.

KURKS (Kredit Usaha Rakyat Kecil): Institutions in East Java (and similar ones elsewhere) give small, short-term, largely unsecured loans and report arrears lower than in a number of government loan programs.

Source: ICRW Report on Women's Credit for World Bank 1987

116. The following general points are worth considering in expanding credit for women:

a) Provide credit in small quantities for relatively short terms (perhaps a year) for any productive activity, with gradual payback in small amounts at frequent intervals.

b) Improve access to credit by creating more branches of lending institutions.

c) Advertise (through modern and traditional channels, including women's organizations) the availability of credit for women.

d) Provide training for and administrative support to women in accounting and economic planning, and minimize bureaucratic requirements.

e) Encourage "solidarity groups" of women to work together, perhaps borrowing collectively or serially (see box 12) and providing mutual support, encouragement, and collective judgment.

f) Move away from asset-based collateral toward more innovative approaches to collateral, including group guarantees.

g) Lend for activities that generate cash income, not just to increase production. Begin with activities in which women already have experience and them move toward nontraditional fields.

h) Encourage savings accounts and the development of assets under women's control.

i) Build on traditional forms of credit and saving that already exist.

j) Work with existing credit institutions that may be willing to try innovative approaches to extending credit if given some technical support or partial guarantees.

k) Consider interest rates that women already pay for credit and compare the credit performance of women under whatever innnovative programs may exist to that of more general credit programs for small farmers or small-scale enterprises.

l) Provide the kinds of support that small-scale enterprises often profit from, to permit "grouping for scale" (Barry, Levitsky).

m) Consider the effects of, and opportunities to establish links with, formal and non-formal education programs.

Discrimination and Disadvantage in the Labor Market

117. Discrimination and disadvantages in education and experience impede women's labor force participation, inhibiting overall economic production (Anker and Hein 1986) Discrimination may appear as rationed access to labor markets for particular groups -- including women -- or as lower wages for similar work. Women everywhere tend to be overrepresented in the less skilled, less mechanized, lower paying lines of work (see box from Schumacher 1980) (Anker and Hein 1986). Apparent differences in the patterns of men's and women's formal labor force participation in many countries do not necessarily imply discrimination. Women's work choices may differ if they (or their families) place greater value on caring for their children themselves and on home-based work (Schultz 1989, Schumacher and others 1980). But considerable evidence from both industrial and developing countries suggests that discrimination and/or disadvantage exist and tend to lock women into fewer, more menial, and less remunerative lines of work (Anker and Hein 1986; Levy 1988). This has obvious implications not only for equity but for economic performance over time.

BOX: 14

Female Participation in the Labor Force in Bogota, Colombia

A study of the Bogota labor market in the late 1970s revealed the effects of two decades of sustained economic growth. Unemployment rates had fallen, and female participation in the labor force had risen. In this tight labor market, the labor force component most likely to expand rapidly with rising real wages was that of married women.

For unmarried females, most of the explanatory variables were not significant -- except widowhood and household headship. Clearly, these women had little choice: they had to work to support their families. This finding may be of particular relevance for the 1980s as the economic downturn appears to have been accompanied by a sharp increase in female household leadership.

The study concluded that unmarried women (widows, divorcees, never married) behave much more like primary workers (somewhat like prime age men), while married women behave more like secondary workers, exhibiting a strong price elasticity of labor supply. This suggests that married women had more choice about whether to work than men or unmarried women.

Overall, the study found that in a tight labor market female labor force participation was determined far more by life cycle and competing home activity considerations than by labor market/career aspirations, despite a strengthening of the education system and almost equal investments in men's and women's education.

Source: Mohan 1985

118. If discrimination exists, it may appear not only as "cultural restrictions" but as legislation and regulation. Legislation may actually prohibit the hiring of women for certain types of work considered to be culturally unsuitable or threatening to women's health -- such as work requiring strenuous lifting or night shifts (Anker and Hein 1986). Formal sector employment may be allocated in response to patronage ties or political strength, and women may generally be less able to compete on this basis. Even without legislative prohibitions, cultural pressures may discourage women from choosing some types of work or working conditions, such as night shifts (Anker and Hein 1986). Some jobs may be advertised only for men. And legal restrictions -- such as forbidding women to enter into contracts in their own name -- may bar women from some lines of work (Anker and Hein 1986; Joekes 1988).

119. It is important to distinguish between differences in productivity resulting from discrimination and disadvantage. Women in any country may produce less because of differences in education, hours worked, and experience (Schultz 1989; Levy 1988). Of course, these differences may reflect earlier discrimination that prevented them from obtaining experience or education. Interruptions in work experience because of childbearing or family responsibilities may compound the problem. And pressures on employers to provide maternity or nursing leave or other special considerations for women may discourage female employment (Ware 1984, Joekes 1988). The question of the employer's interest in or responsibility for a woman's difficulty in balancing family responsibilities with labor force participation is complex, but it is still rare in the developing world to find employers in the formal sector willing to provide more flexible terms and conditions of employment (for example, part time arrangements or child care) so that more young mothers can work. In these circumstances, minimum wage requirements may especially discourage the employment of women. In Mauritius, when new expert industries dropped minimum wage requirements, new jobs were generated that went substantially to women. In fact, women have become the core of the labor force in many of the newer export industries in Asia and elsewhere. Women are still not earning the same as men, but their incomes and employment options are at least expanding.

120. International evidence suggests strongly that as women gain access to education, more women join the labor force, work in a wider variety of occupations, and enjoy higher earnings -- in short, their participation in the labor force begins to resemble men's (Schultz 1989; Anker and Hein 1986). Even in industrial countries, however, progress may be slow and unsteady (Levy 1988). In South Asia, for example, women's lower participation in the formal labor force may well reflect their marked shortfall in education (and perhaps their more limited access to family planning). The unusually high rates of labor force participation in East Asia probably reflect women's higher levels of education (and perhaps their greater access to family planning) which enable them to respond to increasing market incentives.

121. Whatever the barriers, women tend to be more responsive than men to changes in market wage rates (see box). The labor supply response of men is relatively inelastic with respect to their own wage rate and unresponsive to changes in their wives' wage rates. By contrast, the labor supply response of women is elastic with respect to their own wage rate and inversely related to the wage

rate of their husbands. Because the woman's own wage elasticity is so much larger than the cross-elasticity associated with her husband's, the net effect of a proportionate increase in wages paid to women and men is to increase women's labor force participation more (Schultz 1989). (Measures to increase women's earning capacity may also contribute more heavily to tax revenues.) This difference in response may arise because comparatively fewer women now work in the labor force. As more women join the labor force full-time, they may behave more like men, but for now, there are good reasons to analyze men's and women's labor force behavior separately.

Technical Change

122. Technical change may be a boon or a serious economic threat, particularly to poor women. New technology may relieve women from some of the drudgery of unpaid household chores, such as fetching water, cooking, or grinding grain (see Box). These often consume several hours daily and exact a high cost in physical energy, so modest investments in such sectors as rural water supply may save enough time to enable women to pursue other activities including productive work, childcare, training, or leisure (Carloni 1987). Many women, when asked, consider better water supplies to be their primary need. In such different countries as Kenya and Mexico, women have pressed for programs that combine provision of rural water with income earning opportunities (Kenya WID Strategy 1989; Mexico project).

123. On the other hand, new technology may also increase women's workloads or the demand for women's labor without additional compensation (see Box). Often when agriculture is partially mechanized or when cash crops with more mechanization are introduced, men typically gain access to the new, more productive technology (perhaps reflecting women's poorer access to information and credit as well as cultural traditions), and heavier requirements for complementary labor in related tasks tend to fall to women (World Bank OED 1988, 1987). When plowing (men's work) is introduced, it may become possible to increase the land under cultivation, but this requires more nonmechanized transplanting and weeding (women's work). Even if women have the additional energy and can make the time available, they may have little incentive to increase their labor if they do not directly control the income generated, and they may in fact withold some labor -- as occurred in rice production in Cameroon (Jones 1985). On the other hand, if the introduction of "men's crops" means that family income increases and men spend in ways that women approve, women may feel their own situation has improved even if they lose direct control over income in the process. And new opportunities for women may arise with the introduction of technology. If agricultural mechanization leads to greater agricultural output, for example, new jobs may be created in food packaging and processing -- some in the larger scale manufacturing sector, such as canning and freezing, but some suitable to small scale enterprise, such as drying and packaging.

124. In an increasingly mechanized workplace, women -- like any poor and unskilled workers -- may also face a double disadvantage: "technological unemployment" as traditional lines of women's work are replaced by new and less labor-intensive approaches, and weaker qualifications for new kinds of work because of poorer education or training, particularly in scientific fields

(Eshiwani 1985). The result may be that women inadvertently become a drag on technical progress, while technical progress increasingly threatens the most destitute women and their families.

The Vicious Circle

125. Women's poor access to employment, information, and the means of production tends to lock women into low-return activities, with little prospect for shifting out. It directly diminishes production and prevents or reduces multiplier effects on employment and aggregate demand and production. Thus it inhibits the responsiveness of the economy to changes in prices, wages, or other incentives. Faced with familial and cultural constraints, limitations on access to employment and the means to earn higher income, and greater difficulty in getting education and other forms of human capital, women may view their nontraditional opportunities as limited even as objective reality changes (Collier 1987). This chilling effect on women's aspirations has obvious implications for longer run development.

BOX: 15

Women and Rural Technology

In Asia, the introduction of new technologies has taken the form of high-yielding varieties, chemical fertilizers, and irrigation. The effects of these on women and men have been complex, depending on the type of crop, the existing division of labor, and women's socioeconomic conditions (FAO 1985). In Java, for example, the introduction of high-yielding varieties has led to a large decrease in labor input, primarily for female labor. Changes in technology transformed a large female harvest labor force into a much smaller male labor force (Collier 1973 cited in FAO 1985).

The introduction of post-production mechanization, in the form of rice processing mills in Bangladesh and Java, has also served to displace laborers, especially women. Hand pounding of rice had been the domain of women, but when mills were introduced, there was a large reduction in women's employment in favor of men. The loss of employment was particularly serious for landless women and other women in the poorest households (Scott 1983).

HOW ECONOMIC ADJUSTMENT AFFECTS WOMEN

126. In many countries today women and men may operate in the same broad spheres of economic activity, but often play different roles and face different opportunities and constraints. Failure to identify the implications of these differences at the operational level may jeopardize objectives at the economy, sector, or project level and may compromise progress toward other development goals.

127. The macroeconomic framework is as important to women as it is to men. Macroeconomic policies appear to have less specific impact on women than the provision of education, health, credit, or extension services do -- gender-based constraints show up more at the sector level. But sector and macro policies are not unrelated. Moreover, macro policies do affect women -- and women's generally weaker capacity at present to respond to macro policies may affect the impact of these policies. Some of the likely effects of macro policies are discussed here (based largely on Collier 1987 and 1989, Joekes and others 1988, and Joekes 1988).

128. Women's capacity to adjust to changes in economic circumstances varies, as does men's. Better educated women or women equipped to respond (because they have access to credit, resources, and so on) may do very well. But many, arguably most, women are not well educated or well equipped, and many are at a disadvantage compared to men. The question is, how to open up opportunities to women so that they can respond more effectively. Constraints on women's economic responsiveness and flexibility have been identified. They include family and household responsibilities and limited cultural expectations (which especially affect the poor and uneducated); poorer access to information/technology, resources, and credit; and outright discrimination in the labor markets. These constraints not only impede women's entry into more remunerative sectors, but also block their exit from less remunerative sectors (Bevan and others 1988; Collier 1987). Thus women may be concentrated in "women's ghettoes" of economic disadvantage. The failure to equip women to operate as flexible and responsive economic agents can thus help perpetuate entire sectors of low-productivity economic activity.

129. Women's greater inflexibility can also hamper economic adjustment programs. The core requirement for economic adjustment is the reallocation of labor and resources into more remunerative and sustainable activities, in response to market incentives. In short, markets have to function. Adjustment may well cause dislocation and pain during adjustment, but the objective is to achieve adjustment rapidly, protect the vulnerable as much as possible, and equip them to participate as soon as possible in the more productive lines of work. To the extent that women cannot easily adjust to changing economic circumstances, they -- and their dependent children -- are likely to suffer more and suffer longer. Redressing the inequities in women's education and opening up other economic opportunity to women thus has nontrivial implications for the scope, depth, and speed of adjustment programs.

Fiscal Policies

130. Tax policies affect, among other things, the amount and type of government tax revenues. Since women's participation in the formal labor force is more responsive than men's to an increase in wage rates, measures to improve earning opportunities for women may have more impact on government revenues (Schultz 1989). However, since many more men participate in the formal labor force and earn higher levels of taxable income, direct (income) taxation generally affects men more than women. Indirect taxation (on spending or consumption) may fall more heavily on women because regressive taxes have heavier impact on lower-income groups in which women tend to be more represented and because women are usually more responsible for the household budget, sometimes on a sort of allowance from men. To cover increases in indirect taxation, women may need to devote more time to paid labor or buy cheaper goods that take longer to process or cook. Contributing more of their own time to earning activities will generally promote family welfare. But it may also require that women spend less time in other activities, including child care. This may lead to compensating changes in how their older children use their time. Their daughters, especially, may be withdrawn from school or allowed less time to prepare for lessons so they can care for younger children.

131. Government subsidies of food, fuel, or drugs may improve women's real purchasing power and so raise household consumption. The risk is that subsidies may be accompanied by effective rationing. Poor women are less likely to enjoy the privileges of access and may not be able to spend the time needed to search for scarce goods, so the poorest among them may be more obliged to turn to the higher priced black market. If price subsidies are used, effective targeting may be crucial to assure that poor women are indeed reached.

Public Sector Employment

132. Public sector employment (the principal item in many government budgets) is often one of the principal types of formal sector employment. Moreover, in many countries wage levels and working conditions in the public sector set a benchmark for the private sector. Policies that affect employment in the public sector may therefore reverberate throughout the economy. Public sector employment policies can thus help ease the disadvantages that women may face in the formal labor market and help them break into new types of work. However, in many countries women still hold only a small fraction of public sector jobs, which tend to be concentrated in the lower ranks of service. Public sector appointments are often based on family or kinship ties as well as merit, and men may benefit more from these connections.

133. Interventions to improve women's relative position in public sector employment might include:

a) Basic and vocational education and skills training to enhance women's capacity to compete for and perform mainstream jobs.

b) Government initiatives to attract more women to the public sector, such as arranging for part-time work; providing informal or formal child-care

arrangements; and considering quotas -- especially in fields where women may have a comparative advantage (once initial cultural impediments to their employment are overcome), such as health care and teaching, where clients may prefer female providers.

c) Government initiatives to employ women in public works programs, especially in rural areas, to give them work experience in sectors in which they might not have been active previously.

d) Flexible interpretation of, or exceptions from, minimum wage requirements.

Public Services

134. Government programs to promote human capital development -- such as education and training, health and family planning, or technology and extension, -- could do much to improve women's opportunities. But in times of fiscal austerity, attempts to achieve greater cost recovery in the social sectors can have a disproportionately negative effect on women's education and health: girls are reportedly often the first to be withdrawn from school when costs increase, and women/girls tend to receive less health care than men/boys if there are cost constraints. This point should be researched, to establish the extent to which it holds under various conditions.

135. Steps to improve women's access to public services, especially during times of fiscal austerity, ought to go beyond the gender-neutral provision of services and more actively target women. Useful measures, discussed earlier, include shifting resources to the level of service where women are more likely to benefit (basic health care and education at the primary or secondary level) and relying more on women to deliver services (as extension agents, teachers, rural credit officers, and health promoters). Gender-differentiated subsidies to education and health services may be worth considering.

External Trade Regime

136. The effects of trade regulation on women are ambiguous. If, for example, protectionist trade regimes encourage capital-intensive industries that offer highly skilled jobs, women may be at a disadvantage because of their poorer education, skills, and experience. If these industries employ shift labor to maximize use of equipment, women may be further disadvantaged if they are barred by "protective" legislation from night shifts. Special export processing zones often employ women but some generate controversy as to employment conditions.

137. Trade liberalization will have different effects on women's participation depending on the competitive structure of the economy and the specific impacts of reduced regulation. If average wages in manufacturing decline below the minimum wage or if jobs in capital-intensive industries are cut, women may stand to gain and men to lose more, relatively. But in absolute numbers, more men than women are likely to be affected since more men than women work in these sectors. To the extent that employment in the traded sectors is increased by shifting resources from the nontraded sectors where women predominate, women may be

disadvantaged. To the extent that new imports successfully compete with informal sector goods that were previously nontraded, women may also be vulnerable. Finally, women may not be able to adjust as readily as men to changes in the trade regime that alter incentives in the economy and induce adjustment across markets and sectors.

138. To correct these differences, policies should focus on mainstreaming women in the labor force, opening job opportunities to them, and helping them adjust to new market conditions. This in turn will improve the efficacy and efficiency of macro level policies.

Exchange Rate Policy

139. Stimulating foreign trade and competition by devaluing the currency can catalyze a move from a subsistence to a cash economy and shift resources from the nontraded to the traded sectors. Both changes are likely to affect women adversely in the short run, until their mobility and access to productive resources improve. With less access to a cash income than men, women will lack the means to function effectively in an increasingly monetized economy. Further, to the extent that women's employment is relatively more concentrated in the nontraded sectors (subsistence food production, services, small-scale enterprise or trade), devaluation will shift income away from women as relative prices change.

140. On the other hand, by raising the price of imported goods, devaluation may also shift consumer demand to goods produced domestically, including those made in the smaller scale or less formal sectors. To the extent that women are better represented in informal sector employment than in the formal sector, they may benefit, if they are equipped to respond fairly quickily. Further, a more competitive exchange rate may lead to the creation of more jobs for women in labor-intensive, relatively unskilled export industries. It is important, however, to determine whether the increased opportunities for women in such industries are exploitative -- whether women find the pay and working conditions preferable to other options. If women are free to choose, the answer may seem obvious. But sociologists often express concern about these industries, and it is worth considering whether working conditions could be improved at low enough cost that the employers do not instead choose to reduce or change the labor force.

141. Measures to enable women to respond to currency devaluation might include helping women move into tradables information, credit, and training. In African agriculture, during a devaluation-induced shift in production away from (female) food toward (male) cash crops, providing labor-saving infrastructure and technology and credit would help women produce both food and cash crops.

Wages and Prices

142. As prices and wages shift because of monetary policy, wage and price controls, or other measures, the economic balance between men and women may shift. Women (particularly the poor) may be affected more by changes in consumer prices. More educated women may respond more to changes in wage rates. But more

men are engaged in wage employment, so more men will be affected by changes in wage policies. To the extent that households do not behave as the "unitary households" of neoclassical theory, the concept of the real wage may need to be disaggregated into wages for men and wages for women to assess the potentially different impact on men and women of shifts in prices and wages.

143. For women employed in the formal wage sector, an increase in the minimum wage may have two opposing effects: it may create rents for wage employees, and it may cause changes in the overall wage structure. Creation of economic rents will tend to increase the demand for these jobs, and patronage may well affect their allocation. In this, women may be at a disadvantage. The change in the wage structure, however, will serve to reduce the premium for seniority over entry-level positions. Since women are mostly in entry-level jobs, they may be expected to benefit relatively more. The net effect on women will depend on the employment structure and on how such policy changes may affect employment, particularly in terms of job security and hiring policies.

Monetary and Credit Policy

144. Men usually have better access to institutional credit sources than women. So a rise in the commercial rate of interest is more likely to hurt men. A drop may have the reverse effect, as it may induce credit rationing with a gender bias. On the other hand, if the higher interest rate reduces credit rationing and makes credit more available to those who can pay, women may benefit by getting more access to formal sector credit -- provided they are not subject to other constraints such as gender-biased collateral requirements. Interest rate policy is probably not an effective tool to overcome gender-specific differences in access to institutional credit, which should be addressed more directly.

Deregulation

145. If eliminating restrictions and regulations on business activities improves the growth prospects of the small business and informal sectors, women may be expected to benefit more than men. Being generally less educated and skilled, women are less likely to be able to deal with licensing requirements, building codes, zoning restrictions, and other regulations associated with small enterprise management. They are also less likely to have either the financial means or the social standing to protect themselves from official harassment during campaigns to "clean up" squatter settlements and informal sector enterprises. Relaxing protective codes may benefit women to the extent it increases net employment.

146. If, on the other hand, deregulation leads to an increasingly concentrated economy with a monopolistic or oligopolistic market structure, women may suffer as they tend to be less well equipped to compete in a formal labor market.

Privatization

147. Like deregulation and trade liberalization, privatization may be expected to benefit women to some extent, particularly if it strengthens opportunities or encourages productivity in the small-scale and informal sector. It may also

benefit women if it includes measures to facilitate saving and investment among lower income groups, or measures to encourage private sector employment -- although the latter may collide with other interests, such as requirements for job safety or minimum wages. The impact of shifting government responsibility to the private sector in a given field is naturally harder to predict. If government functions are largely the province of men, as deliverers or as recipients, privatization may open new markets and employment opportunities for women. Marketing in Zaire, for example, was predominantly male under government control. Once it was privatized, women's role in maize marketing grew rapidly. The converse might also be expected; as government nationalizes an activity, the new public sector jobs may go mostly to men. Moreover, cutback in public employment will oblige those employees -- mostly men -- to look elsewhere, so competition for private sector jobs will certainly increase.

148. As a result women may be forced into lower paying lines of work unless specific attempts are made to let them compete more evenly with men -- for example by changing credit or training regulations to give them something closer to equal opportunity. Moreover, if public sector salaries are artificially high and many men lose public sector jobs, more women may seek employment or work longer hours to maintain family incomes. It may make sense, then, in a privatization program, to include specific measures to increase employment in smaller enterprises that tend to be more labor-intensive and may be no less efficient than some public enterprises.

Adjustment Programs

149. Women's lesser ability to respond to shifts in market incentives has direct implications for the efficiency and success of structural adjustment programs (Collier 1989). This paper has suggested why women may have problems shifting resources across sectors, and that public intervention can correct or offset some of these constraints. This discussion of structural adjustment echoes some points made earlier.

150. When structural adjustment places a premium on resource mobility, the need to fine-tune the balance between the public and private sectors to promote market efficiency is increased. In many African countries, for example, women tend to be employed in the nontraded sectors (food, services), and men in the traded sectors (cash crops, manufacturing). During efforts to shift resources from the nontraded to the traded sectors, it is women, not men, who must adapt the most. The fact that women are concentrated in nontraded sectors suggests that practical barriers impede women's entry into the (usually more profitable) traded sectors. So the main thrust of structural adjustment must be to identify and alleviate the constraints to mobility across sectors -- to make allocation more efficient and reduce the social costs of adjustment.

151. Austerity measures affect different layers of society differently. Women are often among the most vulnerable, for whom special compensatory measures may be required.

152. One problem with measuring the impact of adjustment in a given country is the lack of time series data -- especially gender-disaggregated date -- at the household level. The dearth of such data limits analysis of women in development generally, but the data needed to assess the impact of adjustment are particularly scarce. It may be useful to develop gender-specific indicators to track the status of the most vulnerable groups. Sample surveys at the household level, including those now carried out or planned by the Bank, are a large step in the right direction. But most could give greater attention to nutritional status by gender, pregnancy history, sources of income by gender, types of assets under female or male control, female head-of-household status, access to and consumption of particular kinds of social services, and other defining characteristics of groups likely to be particularly vulnerable. Such data collection is not costless, but it would allow more solid research on how particular policy and program decisions affect specific groups and how greater economic mobility and efficiency can be achieved.

MANAGING POPULATION GROWTH AND THE ENVIRONMENT

153. Helping women develop economic strength and human capital produces social benefits by influencing the size and quality of the labor force, the direction of population trends, and the quality of the environment.

Future Labor Force

154. Perhaps because of their generally greater responsibility for children, mothers in many societies have more impact on and may attach greater importance to children's welfare. The mother's education has more impact on child health and schooling than the father's does and in an area like South Asia women's employment in the labor force (and resulting higher income) actually improves children's survival rates. Market-based economic productivity of members of a family probably directly affects shares of family consumption, human capital formation, and overall welfare.

Fertility Determinants

155. Family size reflects the frequency of childbearing and the length of time a woman is exposed to pregnancy (age at marriage). In more traditional societies, girls still marry young (sometimes essentially at menarche), but increased education and income are strongly associated with delayed marriage. Deliberate policies -- notably, legislation -- to delay marriage may also help, although the effect is difficult to predict. Recent declines in fertility in the developing world reflect gradual delays in marriage -- which may account for about one-third of the decline in fertility in the developing countries of Asia. Breastfeeding, which delays ovulation, also affects fertility. But family size still primarily reflects marital fertility and the couple's ability and desire to control it.

156. Demand for children and women's opportunities. Avoiding pregnancy requires a deliberate decision. Parents balance the advantages and disadvantages, as they see them, of available means of family planning against those of having another child. Parents tend to opt for smaller families when the opportunity cost of high fertility rises and the opportunity cost of family planning falls. Available evidence suggests that the opportunity cost to women has the most influence.

157. Poor parents tend to want large families to provide reliable help and protection around the home or farm, to increase family income, and to assure old age support (World Bank WDR 1980 and 1984; USAID 1976). If daughters "marry out" or face less promising earning prospects or if culture favors sons, parents may prefer sons. This preference may manifest itself as less care for daughters and higher mortality rates for girls (Schultz 1989; Pitt and Rosenzweig 1988; World Bank 1989b). Or, if daughters maintain ties to their parents, poor parents in rural areas may even "export" daughters to more distant farming areas as a sort of portfolio diversification strategy.

158. But as women's education and earnings improve, their dependence on children lessens, their aspirations expand, and the opportunity cost of bearing and caring for children rises. Women who have greater earning opportunity will tend to have smaller families.

159. When men's income rises, all else being equal, families tend to demand more of certain goods and services and to prefer larger families. (Children are in this sense a "normal" good.) But the assumption that all else is equal is wrong -- other things do not stay the same. For one thing, family aspirations shift. As family incomes rise over time, fertility declines. This pattern is sharper and more immediate as women earn more and contribute more to family income. Their earning opportunities tend to compete more with childbearing and childrearing. The care of children in many cultures requires much of their mothers' time so an increase in women's relative earning capacity is likely to increase the opportunity cost of children and thus decrease fertility, even though it increases family income (Schultz 1989; Cochrane 1979).

160. Employment aside, more educated women tend to have smaller families (WDR 80,84). This effect emerges more clearly when research holds constant for husband's education and income (Schultz 1989). Exactly how education influences fertility is not fully understood (Cochrane 1979). Part of the effect is increased earning capacity, but part relates to family planning. Some evidence suggests that educated women are more willing to practice contraception -- because they are more interested in having smaller families (Cochrane, others). Other evidence suggests that more educated women are more willing and able to use modern, more effective, means of family planning (World Bank 1989a).

161. "Insurance births" and child care. Where children's health is poor, parents may consciously or unconsciously seek additional births to ensure the survival of some minimum number of children or sons. Basic health care for mothers and children, the ability to time pregnancy, and services and income that assure nutrition all improve children's health and so encourage parents to opt for smaller families. (Because so many more children survive, final family size usually does not fall because of improvements in child health. Changes in "demand influences" through female education, for examples -- are also usually necessary to slow population growth.)

162. Family planning to achieve desired family size. Family planning services and information have been one of the main influences on family size in most countries. Having the option of family planning available is also essential to enable women to space pregnancies and so make time for other activities, including education and training, participation in the labor force, the teaching and care of existing children, and recreation. Demographics and women's choices are inextricably linked.

163. Worldwide, governments have agreed that couples have the right to information and the means to plan their families (World Population Conference 1984). Yet in most countries -- even those where couples want large families -- women are having more pregnancies than they say they want, according to data from the World Fertility Survey. In Pakistan, for example, some 40 percent of women now wish to have no further pregnancy. If this unmet need for family

planning information and services could be met, birth rates would certainly fall well below current levels in these countries.

164. The difficulty is that women in different stages of life and different circumstances require different kinds of family planning service and information. As a broad-brush generalization, young women may wish to delay the onset of childbearing, many women in their twenties may wish to space births, and many women in their thirties may wish to stop bearing children. Of course, these age categories are not precise. Family planning programs must be adjustable to satisfy different user demands. Young women and those spacing pregnancies require temporary methods, particularly contraceptive pills and condoms, but also the others. (Some of those, such as injections, last several months or more.) Other couples who want to stop having children altogether may prefer permanent surgical methods, particularly since older women face increased risk of side-effects from pills. In all age groups, it is important to offer male contraceptive options -- notably condoms and vasectomy -- and to encourage men not to leave the contraceptive decision up to their partners.

165. Septic induced abortion is an increasing concern in much of the developing world. It tends to occur more often when induced abortion is illegal. Family planning can prevent unwanted pregnancy.

166. Adolescent pregnancy has become a significant social problem in many countries, from Africa to Latin America -- and in some industrial countries. A direct result is the increased incidence of induced abortion, with considerable associated mortality and morbidity. It threatens both maternal and child health as young mothers are not physically mature enough to bear children easily (Herz and Measham 1987). And it contributes to high female dropout rates in secondary school, generally limiting the earning prospects of the young mothers. The economic consequences are particularly acute for single young mothers responsible largely for their own children.

167. Young women, and women in the prime childbearing years need access to information and ways of spacing children. Older women need the means to cease childbearing. Many maternal deaths (15 to 60 percent in many countries) could be averted simply by preventing pregnancies that women now say they do not want -- even where couples want several children, women are having many unwanted pregnancies (Maine and others 1986). But programs cannot be aimed just at those who want no more pregnancies. To have maximum effect, family planning must be an option for any women of childbearing age.

Promising Approaches to Family Planning

168. Variety of methods. More evidence is available on cost-effective ways to deliver basic family planning services than on many other basic services, including agricultural extension, credit, nonformal education, and other forms of health care (USAID 1988; World Bank 1986). Extensive international evidence demonstrates that family planning acceptance increases when women are offered a variety of clearly explained contraceptive choices and when services are brought closer to home, particularly where culture and poverty make it difficult for women to travel. It is essential to have a variety of good temporary

methods. When offered, the pill remains the method of choice for many women. Condoms have the added benefit of guarding against the transmission of AIDS and have no medical side effects. Many new temporary methods, such as the vaginal sponge, are also proving acceptable. Demand for sterilization is often greater than many expect. In Kenya, for example, there are now six-month waiting periods. As use of temporary methods has increased and family planning has become generally more acceptable, demand for sterilization has increased sharply and now far exceeds the system's capacity to respond. In short, it is important to consider not just "demand for family planning" -- but demand for different kinds of family planning services.

169. Delivery systems. Typically, family planning information and services are offered in three broad ways: through clinic-based programs (ideally providing a full range of methods to clients who come); through community-based "outreach" programs where service providers seek out clients and offer temporary methods (notably contraceptive pills, condoms, and sometimes others); and through information, education, and communication (IEC). In the short run, clinic-based and outreach programs are often substitutes for each other -- but detailed evaluations suggest that outreach programs may well build demand for and encourage more effective use of clinic-based services. In a number of countries, commercial distribution -- or "social marketing" programs utilizing private commercial channels -- have provided temporary family planning methods, notably condoms and pills, particularly in urban areas. Social marketing programs are sometimes still the only ready means of obtaining temporary methods in rural areas when health services are scarce. Private physicians and health care providers play an active role in some countries but usually do not reach many of the poor or dispersed populations.

170. Community-based outreach. Outreach programs are often crucial in areas where demand is weak and family planning is a relatively new idea. From Indonesia to Zimbabwe, Bangladesh to Colombia, community based outreach programs have proved a cost-effective way to provide family planning, particularly in the early stages of programs and when linked to basic health systems capable of providing clinical family planning methods (Herz and Measham 1987; World Bank 1986; USAID 1988). In such programs, "outreach workers" from the community deliver basic information and services to their neighbors; the outreach workers often serve as the "front line" of service delivery for the primary health care system, but may be attached to other administrative structures such as family planning associations or women's groups. There are limitations. Outreach workers, especially when illiterate, can manage only so many topics at one time; basic outreach workers cannot provide more than basic care, so protocols for referral must be supplied to them; outreach workers need in-service training, dependable supplies, and general administrative backup; and so on. But considerable operational research has been done, so much is known about how to address these family planning issues in replicable, affordable ways, at least compared to other fields of service delivery. Some of the principles of successful family planning and other service delivery programs --- for example agricultural extension -- seem related and transferable. It is not yet known whether the need for outreach in family planning -- or agricultural extension and similar service delivery programs -- will diminish as education expands.

171. Family planning for men. Finally, most family planning acceptors today are women. It is important that better family planning methods for men be developed and greater efforts be undertaken to encourage men to favor family planning. At a minimum, condoms and vasectomy should be made available and men should be encouraged to join in a couple's contraception decision. This will increase the number of couples willing to practice contraception and strengthen their commitment.

Use of Natural Resources

172. Women's responsibilities for collecting fuelwood, fodder, and water for daily household use have meant that they are more likely to maintain these natural resources over time (see box) (Dankelman and Davidson 1988). Men may be more likely to perceive trees as salable wood -- an immediate source of income -- and have less regard for longer run degradation of the forest or the additional time women might have to spend gathering fuel from increasingly distant sources (Molnar 1989).

173. Women and household water supplies. Water and sanitation is a women's issue. Women and children in communities throughout the developing world bear the primary responsibility for fetching water, sometimes more than once a day. This may take several hours daily, particularly in Africa and Asia. Women make most decisions as to whether they will or will not use a specific water point given its distance and accessibility. It is they who are in charge of storing the water, cooking with it, and disposing of it. Women are also in charge of family hygiene, bathing, and sanitation. Water, or the lack of it, plays such a dominant role in women's lives that it may account for as much as one-third of a woman's work day. When asked what their primary needs are, women in all regions -- perhaps especially in Africa -- often list reliable family water supplies first.

174. For many women, especially in rural areas, the quantity, reliability, and proximity of the water supply matter more than its quality. Women may actually neglect newer and more protected sources if they consider them less accessible than traditional sources of water and if they do not fully understand the benefits of clean water. Specific health and sanitation education is needed to help users understand the links between clean water, sanitation, and the prevention and treatment of waterborne diseases. But few women doubt the benefits of having a plentiful supply of water close to home.

175. Carrying water for several hours daily over rugged terrain can affect women's health in several ways. Many women suffer chronic fatigue throughout their lives, in good part because they lack the food they need for energy and strength to haul water. Pregnant women are particularly susceptible to malnutrition and anemia. Many women also suffer orthopedic problems that it is reasonable to attribute to carrying heavy loads of water daily on their backs or heads. The research on these points is limited.

176. Easier access to water can increase the time and strength women have to spend in productive work. This is plainly true in areas where women contribute

heavily to agriculture. Women's time often becomes the binding constraint when more productive but labor-intensive technologies are introduced. Available research, though scarce, suggests that most women -- even those not usually engaged in agriculture -- would find constructive uses for 2 to 3 hours of released time, including time to spend with their children (World Bank, 1989a, 1989b).

177. By 1990 almost two billion people in the developing world will lack safe drinking water and even the simplest sanitation facilities. This reflects not only population growth but the deterioration of many existing water supply systems. Until recently, the emphasis has been on establishing, rather than sustaining, water supply systems. Maintenance was felt to be relatively manageable. Chronic problems in water supply projects all over are strong evidence of the need for more attention to sustainability. Women certainly ought to play a greater role than they have been permitted in the past. Being largely responsible for household water supplies, they have more incentive to make community water supply projects work. It is therefore only sensible -- but nonetheless rare -- to involve women in planning and executing community water supply projects. This is particularly true in rural areas, where technologies tend to be less mechanized and the need for labor-intensive maintenance is higher. (A few successful projects do give design, maintenance, and even broader management control substantially to women.) Urban systems -- piped household connections, sewers, and the like -- tend to require less regular input from users. For projects to be sustainable, clients must take control of and accept responsibility for them. An example is the recent Bank project extending water in conjunction with credit to women in Mexico.

178. Promising approaches in rural water supply. In designing rural water supply programs that will involve women effectively, the following issues are worth considering as a start:

a) Users' views on need: Who is responsible for obtaining the family's water supply and what are her (or his) views on tradeoffs between quality and quantity? What are the broader community views on these issues and on how much time or energy those who obtain the water ought to spend on that task?

b) Education on benefits: Are users being advised as to the health benefits of clean water and the hygiene and other health practices necessary to assure maximum benefits? This will obviously affect their demand for water as well as their willingness to help finance or contribute labor to maintain water systems. Women are generally all too aware of the potential gains from time saved in water collection but are often not fully aware of the health benefits.

c) Proximity: Does the design of the water supply system provide enough water of acceptable quality close enough to households that it will be used, given the overall responsibilities of women? Is the water supply reliable all year? Are women being consulted in selection of the sites for water supplies?

d) Technology and sustainability: Are women and the broader community being consulted on the actual choice of technology? Once chosen, are they being taught how it works? To what extent can potential users and the broader community finance or help with initial construction and maintenance requirements? Will women be involved in construction, maintenance, management, and finance/cost recovery?

e) Training: Are training programs being organized to reach women not just once but enough to maintain repair skills and knowledge about water uses over time? Will training sites, times, and staff be selected to make it easy for women to participate? It may be possible to link this training with the health system, school feeding programs, or similar efforts. Many clinics give presentations on hygiene and other preventive health measures for groups of clients, usually mothers and children, who are waiting to be seen.

f) Local organization: Are women's groups, NGOs, or other local groups being mobilized to help facilitate cooperation between the community and the government or other institutions providing the water? Are women being given a chance to serve as leaders or spokesmen for such groups? (One advantage of working with women's groups is that women will indeed lead them and voice their real views.) Such groups can often help efficiently with planning, construction, maintenance, and even cost sharing.

g) Cost Recovery: Are women being given greater opportunity to earn income that will help them contribute to the costs of rural water supplies? Bank projects in such diverse areas as Mexico and Gambia are planning to combine community-based rural water supply programs with greater efforts to enable women to earn. Other efforts in Africa and Asia suggest that a community-based approach focused on women can be effective, despite the need to spend time and resources to understand and work with the community. The records of programs such as KWAHO in Kenya compare favorably with those of many other efforts to provide water through more technologically sophisticated and capital-intensive systems that involve clients less (see box).

179. Forestry. Women are major actors in the forestry sector throughout the world. They and their children are the primary collectors of fuel and fodder for home consumption and for sale to urban markets. With increasing population pressure on the land, women in such diverse settings as Kenya and Nepal must daily travel longer distances, often for more than two hours, to find their family's fuelwood. But women's role in forestry goes well beyond their responsibility for fetching the family fuel. Women also work actively on forest plantations and are often a major source of knowledge on the growth, use, and management of forest resources. In many countries they are also the main managers of such "minor forest products" as plant fibers, medicinal plants, fruits, and edible and industrially usable seeds.

180. To take women's needs, functions, responsibilities, and constraints into account, one must begin at the planning stage in forestry sector work and projects. First, one must identify properly the short- and long-term needs of different users -- including different categories of women -- for existing and planned forest resources. This will help identify the extent to which women may or may not benefit from particular interventions and will suggest more promising approaches.

181. Sectoral analysis should look at women in different socioeconomic groups (rural, port, herders, landowners, smallholders, landless, tribal):

a) As collectors and users of forest products for the household and farming system: fuelwood and fodder worldwide, specific foodstuffs in each country (mushrooms, leafy vegetables, nuts, insects, seeds, starchy roots, spices, cooking oils), silk cocoons, basket fiber, or utensils.

b) As producers and entrepreneurs -- for example women in Dominican Republic making handicrafts from palm fronds, women in India making bidi cigarettes, Chinese women processing bamboo and Indonesian women processing dyes.

c) As laborers in nursery operations, soil work and planting; watering seedlings and establishing trees and grasses; protecting trees against foraging animals and illicit felling; and harvesting.

d) As planners and managers devising rotational systems for forest or grassland management, allocating traditional compost supplies to agriculture, or planting and harvesting household tree stocks.

182. Economic sector work has failed to emphasize women's roles in forestry for lack of studies that offer clear data on the gender-related aspects of this sector and the economic returns from women's activity. More descriptive information is recently becoming available (Fortmann and Rocheleau 1985, FAO 1987), but no global statistics documenting women's participation exist. As a result: a) women are not as productive as they could be, b) forestry investments are not made in areas that are most important to women, and c) expected changes in forest management and industrial development do not occur.

183. In forest-rich countries (such as Indonesia or Brazil), planning tends to center around the timber industry and too little attention is paid to other equally profitable forest products. Planners fail to tap the knowledge of indigenous women (and men) about the value and optimal management of natural forests to provide not only timber but medicinal plants, fibers, resins, gums, dyes, condiments, and foodstuffs. Women are major collectors of nonwood forest products (NWFP, usually called "minor" forest produce), but their formal involvement in NWFP collection, marketing, and processing is not consciously addressed. As a result, returns for their work are low, they are often not trained along with men, and they are not recruited as forest contractors, members of forest cooperatives, or managers of forest corporation labor. In the timber industry, they are not given optimal working conditions for plantation, nursery

work, wood harvesting, or processing -- that is, appropriate tools, training (about safe pesticide handling, for example), equal wages, or child-care facilities. The opportunity to target small-scale wood processing enterprises to female forest labor is lost.

184. In forest deficit countries, afforestation efforts are sometimes less successful because women do not receive income from plantations and sometimes therefore do not protect the trees planted or regenerated. Species in plantations may be put under management systems optimal for timber with spacing and cutting regimes that prevent women from getting products they value -- fruit, seed pods for fodder, or a regular supply of fuelwood. The failure of projects to alleviate fuel and fodder shortages has too often been attributed to villagers' commercial objectives and too seldom to gaps in technological recommendations. The scope to involve women's groups in tree and fodder planting efforts on wastelands is often unrecognized. Such groups also need support services such as assistance in getting access to land, extension information, or inputs.

185. In farm forestry, attention has been on the farm household as a unit, not recognizing the gender-linked differences in species preference and access to land, hired labor, draft power, improved inputs (fertilizer, etc) or water resources. Where women are major agricultural decision-makers -- particularly as de facto female household heads -- this inattention results in the loss of an important target group of households.

186. Women have also not always been considered major participants in on-farm programs to encourage agro-forestry or soil and moisture conservation. Yet they may be effective. In Honduras, a soil conservation project tried to involve men in terracing rainfed fields but failed. Women heard about the project, and without access to the project-supplied credit and inputs, terraced fields with their own labor. Men later became involved, and the project is now a success. Labor is an important aspect of watershed development. Assumptions of female or male willingness to adopt more labor-intensive conservation practices on rainfed lands are often made with no regard for time-allocation in the household. In upland areas, farm households near forest may get substantial income informally from women's forest-based activities and formally from men's off-farm wages. The expected returns from improved, labor-intensive agricultural practices may not be high enough to persuade women or men to reallocate their time.

BIBLIOGRAPHY

Acharya, M. and L. Bennett. 1982. "Women and the Subsistence Sector: Economic Participation and Household Decision Making in Nepal." World Bank Staff Working Paper No. 526, Washington, D.C.

Anker, R. 1983. "Female Labour Force Activity in Developing Countries: A Critique of Current Data Collection Techniques." Population and Labour Policies Papers No. 136, Geneva: ILO.

Anker R. and C. Hein. 1986. "Sex Inequalities in Urban Employment in the Third World." International Labor Organisation, London: McMillan.

Ausen, M. 1977. "Maternal Septicemia and Death After Circumcision." Tropical Doctor, October 1977.

Belenky, M., B. Clinch, N. Goldberget, and J. Tanule. 1986. Women's Ways of Knowing: The Development of Self, Voice and Mind, N.Y.: Basic Books.

Belsey, M. 1976. "The Epidemiology of Infertility: A Review with Particular Reference to Sub-Sahara Africa." Bulletin of the World Health Organization 54 (3) Geneva.

Berger, M. ed., 1988. "The Informal Sector, Microenterprise and Women's Work in Latin America." International Center for Research on Women, Washington, D.C.

Berger, M. 1988. "Women's Responses to Recession in Latin America and the Caribbean: A Focus on Urban Labor Markets." International Center for Research on Women, Washington, D.C. Processed.

Bevan, D.L., P. Collier, and J. Gunning. 1988. "Women, Public Services, and Income Generation: A Research Proposal." Oxford: Institute for the Study of African Economies, and World Bank: Women in Development Division, Washington, D.C.

Birdsall, N. and W. McGreevey. 1983. "Women, Poverty and Development." In Women and Poverty in the Third World. Buvinic and others, eds. Baltimore: Johns Hopkins University Press.

Bleiburg, F, and others 1980. "Duration of Activities and Energy Expenditure of Female Farmers in Dry and Rainy Seasons in Upper Volta." British Journal of Nutrition, 13.

Blumberg, R. 1987. "Income under Female vs. Male Control." San Diego, C.A.: University of California, processed.

Boserup, E. 1970. Women's Role in Economic Development. New York: St. Martin's Press.

Buchanan, R. 1975. "Effects of Childbearing on Maternal Health." Population Reports. Ser. J, No. 8.

Buvinic, M., M. Lycette, and W. McGreevey, eds. 1983. Women and Poverty in the Third World. Baltimore: Johns Hopkins University Press.

Caldwell, J.C. 1979. "Education as a Factor in Mortality Decline." Population Studies 33.

Carloni, A.S. 1987. "Women in Development: AID's Experience, 1973-1985." Vol I Synthesis Paper, AID Program Evaluation Report No. 18, Washington, D.C.: U.S. Agency for International Development.

Chamie, M. 1983. "National, Institutional and Household Factors Affecting Young Girls' School Attendance in Developing Societies." Washington, D.C., ICRW.

Chatterjee, M. 1988. "Indian Women, Health and Productivity." Background Paper for World Bank Paper "India: Gender and Poverty", World Bank: Women in Development Division, Washington, D.C., processed.

Chen, L., E. Hug, and S. D'Souza. 1981. "Sex Bias in the Family Allocation of Food and Health Care in Rural Bangladesh." Population and Development Review 7 (3) : 435-474.

Cochrane, S. 1979. Fertility and Education: What Do We Really Know, Baltimore, MD: Johns Hopkins University Press.

Cochrane, S., J. Leslie, and D. O'Hara. 1980. "The Effects of Education on Health." World Bank Staff Working Paper 405, Washington, D.C.

Collier, P. 1973. "Recent Changes in Rice Harvesting Methods." In Bulletin of Indonesian Economic Studies 9(2).

Collier, P. 1987. "Women in Development: Defining the Issues." Paper prepared for the World Bank: Women in Development Division, Washington, D.C.

Collier, P. 1989. "Women and Structural Adjustment in Africa." Oxford University and World Bank: Women in Development Division, Washington, D.C., processed.

Dankelman, I. and J. Davidson, 1988. Women and Environment in the Third World. London: Earthscan Publications, Ltd.

De Beyer, J. 1988. "Employment and Labor Market Issues." In Human Resources Development in Malawi: Issues for Consideration. Southern Africa Department, Population and Human Resources Operations Division, World Bank, Washington, D.C.

Dwyer, D. 1983. "Women and Income in the Third World: Implications for Policy." International Programs Working Papers, No. 18, The Population Council, New York, June.

Edgerton, V. and others. 1979. "Iron Deficiency Anemia and its Effect on Worker Productivity and Activity Patterns." British Medical Journal.

Eshiwani, G. 1985. "The Education of Women in Kenya: 1975-1984." Nairobi: Bureau of Economic Research, Kenyatta University.

Evenson, R., B. Popken, and E. King. 1980. "Nutrition, Work and Demographic Behaviour in Rural Philippine Households." In Rural Asian Household Studies, H. Binswanger and others, eds. Singapore: Singapore University Press.

FAO. 1985. "Women and Developing Agriculture." Women in Agriculture Series, No. 4, Rome.

FAO. 1987. Restoring the Balance: Women and Forest Resources, Rome: FAO Forestry Department.

Florencio, C. and M. Aligaen. 1980. "Food and Nutrient Distribution in Filipino Urban Households." Nutrition Reports International.

Folbre, N. 1986. "Cleaning House: New Perspectives on Households and Economic Development." Journal of Development Economics, 22:5-40.

Fortmann, L. and D. Rocheleau. 1985. "Women and Agro Forestry: Four Myths and Three Case Studies," Agroforestry Systems. 2 (4).

Griffiths, M. 1988. "Maternal Confidence and Child Well-Being." Paper for the Society for Applied Anthropology Annual Meeting, 1988, Tampa, Florida.

Hamilton, S., B. Popken, and D. Spicer. 1984. Women and Nutrition in Third World Countries. New York: Praeger Special Studies and South Hadley, M.A.: Belgin and Garvey Publishers Inc.

Hauck, H. 1963. "Weight Changes During Pregnancy, Awo Omamma, Nigeria, 1960." Journal of Obstetrics and Gynaecology of the British Commonwealth. 70.

Herz, B. and A.R. Measham. 1987. "The Safe Motherhood Initiative: Proposals for Action." World Bank Discussion Papers No. 9, Washington, D.C.

Horowitz, G. 1980. "Inter-family Distribution of Food and Other Resources." Draft Report to the Nutrition Economics Group under Contract 5331912-9-60 (Office of Nutrition, Development Support Bureau, AID, Washington, D.C.).

Hossain, M. 1987. "Credit for Alleviation of Rural Poverty: The Experience of Grameen Bank in Bangladesh." Washington, D.C. and Dhaka: International Food Policy Research Institute and Bangladesh Institute of Development Studies.

Hossain, M. and R. Afsar. 1988. "Credit for Women: A Review of Special Credit Programmes in Bangladesh." Dhaka: Bangladesh Institute of Development Studies.

Humana, C. 1986. "The Economist's World Human Rights Guide." London: Hodder and Stoughton Ltd.

IPPF (International Planned Parenthood Federation), Medical Bulletin, 15-2, London.

Jamison, D. and P. Moock. 1984. "Farmer Education and Farm Efficiency in Nepal." World Development 12(1).

Jiggins, J. 1987. "Outline of a Programme to Strengthen Women's Economic Contribution." Washington, D.C.: Background Paper for the World Bank: Women in Development Division, Washington, D.C., processed.

Joekes, S. 1988. "Gender and Macro-Economic Policy." Institute of Development Studies, University of Sussex, Brighton, England.

Joekes, S., M. Lycette, L. McGowan, and K. Searle. 1988. "Women and Structural Adjustment." International Center for Research on Women, Washington, D.C.

Jones, C. 1985. "The Mobilization of Women's Labor for Cash Crop Production: A Game Theoretic Approach." In Women in Rice Farming, International Rice Research Institute, Manila: Gower Publishing Co., pp. 445-454.

Khandker, S. 1987. "Women's Time Allocation and Household Non-Market Production in Rural Bangladesh." The Journal of Developing Areas, 22.

Khandker, S. 1988. "Determinants of Women's Time Allocation in Rural Bangladesh." Economic Development and Cultural Change.

King, E. and R. Evenson. 1983. "Time Allocation and Home Production in Philippine Rural Households." In Women and Poverty in the Third World, Buvinic and others, eds., Baltimore: Johns Hopkins University Press.

Kurrien, J. 1988. "The Education of Girls and Women in India." Background Paper for World Bank Study, "India: Gender and Poverty", World Bank: Women in Development Division, Washington, D.C., processed.

Kwast, B. 1987. "Roads to Maternal Death: Case Histories, Including Comments on Preventive Strategies." World Health Organization, Informal Background Paper prepared for Safe Motherhood Conference, Nairobi, Kenya, February, 1987.

Lele, U. 1986. "Women and Structural Transformation." Economic Development and Cultural Change. 34 (2).

Levy, F. 1988. Dollars and Dreams. New York: Russell Sage Foundation.

Lycette, M.A. 1984. "Improving Women's Access to Credit in the Third World: Policy and Project Recommendations." International Center for Research on Women, Washington, D.C.

Lycette, M.A. 1986. "Improving Basic Educational Opportunities for Women in Developing Countries." International Center for Research on Women, Washington, D.C.

Mahran, M. 1981. "Medical Dangers of Female Circumcision." IPPF Medical Bulletin (15-2), London.

Maine, D. and others. 1986. "Prevention of Maternal Deaths in Developing Countries." New York. Columbia University, School of Public Health, processed.

Mohan, R. 1985. "Labor Force Participation in a Developing Metropolis." World Bank Staff Working Paper No. 749, Washington, D.C.

Molnar, A. and G. Schreiber. 1989. "Women and Forestry." World Bank PPR Working Paper No. 184. Washington, D.C.

Pitt, M. and M. Rosenzweig. 1988. "Estimating the Intra-Family Incidence of Health: Child Illness and Gender Inequality in Indonesian Households." Minneapolis, M.N.: University of Minnesota, processed.

Ravindran, S. 1986. "Health Implications of Sex Discrimination in Childhood." World Health Organization and UNICEF, Document WHO/UNICEF/FHE 86.2.

Recchini de Lattes, Z. and C. Wainerman. 1982. "Female Workers Undercounted: The Case of Latin America and Caribbean Censuses." Working Paper No. 12, Population Council, New York.

Rosenzweig, M. and R. Evenson. 1977. "Fertility, Schooling and the Economic Contribution of Children in Rural India." Econometrica, 1977.

Schultz, T.P. 1987. "Labor Market Discrimination: Measurement and Interpretation." Paper prepared for Nancy Birdsall and Richard Sabot, eds., Labor Market Discrimination in Developing Economies. Washington, D.C., World Bank, forthcoming.

Schultz, T.P. 1989. "Women in Development: Objectives, Framework and Policy Interventions." World Bank PPR Working Paper No. 200. Washington, D.C.

Schumacher, I., J. Sebstad, and M. Buvinic. 1980. "Limits to Productivity: Improving Women's Access to Technology and Credit." Washington, D.C., International Center for Research on Women.

Seager, J. and A. Olson. 1986. "Women in the World: An International Atlas." New York: Simon and Schuster.

Sen, A.K. 1983. "Indian Women: Well-Being and Survival." Cambridge Journal of Economics, 1983.

Sen, A.K. 1987. "Notes for the Seminar on Women's Issues in Development Policy." International Center for Research on Women, 27 March.

Sivard, R.L. 1985. Women -- A World Survey. Washington, D.C.: World Priorities.

Spencer, D. and D. Byerlee. "Technical Change, Labor Use, and Small Farmer Development: Evidence from Sierra Leone." African Rural Economy Program, Working Paper, No. 15, Michigan State University.

Spurr, G. "Physical Activity, Nutritional Status, and Physical Work Capacity in Relation to Agricultural Productivity." In Energy Intake and Activity. New York: Alan R. Liss, Co.

Stiglitz, J. 1974. "Alternative Theories of Wage Determination and Unemployment in LDC's." Quarterly Journal of Economics. 88.

Stinson, W. 1986. "Women and Health: Information for Action." Washington, D.C., American Health Association, processed.

Tinker, I. 1981. "New Technologies for Food-Related Activities: An Equity Strategy." In Women and Technological Change, R. Dauber and M. Cain, eds.

Thomson, A. and others. 1966. "Body Weight Changes during Pregnancy and Lactation in Rural African (Gambian) Women." Journal of Obstetrics and Gynaecology of the British Commonwealth. 73.

United Nations. 1975. Economic Commission for Africa Women's Programme. "Women of Africa -- Today and Tomorrow." Addis Ababa.

United Nations. 1987. "Training Users and Producers in Compiling Statistics and Indicators on Women in Development." UN ECOSOC, ECA, and INSTRAW. Studies in Methods, Series F., No. 45. New York.

USAID (U.S. Agency for International Development). 1976. "Population Analysis Paper." USAID Policy Paper, AIDTO Circ 288, Washington, D.C.

USAID (U.S. Agency for International Development). 1982. "Women in Development." USAID Policy Paper, Washington, D.C.

USAID (U.S. Agency for International Development). 1988. Office of Population. Reports on the Operations Research Project.

U.S. Department of Commerce, Bureau of the Census and USAID Office of WID, 1985. "Women of the World: A Chartbook for Developing Regions." Washington, D.C.

Venkatchalam, P., K. Shankar, and C. Gopalan. 1960. "Changes in Body Weight and Body Composition During Pregnancy." Indian Journal of Medical Research, 48.

Ware, H. 1984. "Effects of Maternal Education, Women's Roles and Child Care on Child Mortality." Child Survival Strategies for Research. Mosely, W.H. and L.C. Chen, eds. New York: The Population Council.

Ware, H. 1988. "Improving Statistics and Indicators on Women using Household Surveys." United Nations Statistical Office and INSTRAW, Studies in Methods, Series F., No. 48.

Ware, H. 1988. "The Effects of Fertility, Family Organization, Sex Structure of the Labour Market and Technology on the Position of Women." Conference on Women's Position and Demographic Change in the Course of Development, Oslo, Norway, June 15-18.

Wash, 1987, Report, Washington, D.C., USAID, Office of Health.

Wheldon, A. 1986. "Representation of Girls in School Education in Swaziland." Bulletin of the Swaziland Institute for Educational Research 7.

White, K., M. Otero, M. Lycette, and M. Buvinic. 1986. "Integretating Women into Development Programs: A Guide for Implementation for Latin America and the Caribbean." International Center for Research on Women, Washington, D.C.

WHO. 1982. "The Prevalence of Nutritional Anemia in Women in Development Countries: A Critical Review of Available Information." World Health Statistics Quarterly, No. 2.

WHO, Division of Family Health. 1985. "Prevention of Maternal Mortality." Report of a WHO Interregional Meeting, Geneva.

WHO, Division of Family Health. 1986. "Maternal Mortality Rates." Geneva.

WHO, Division of Family Health. 1986. "Essential Obstetrical Functions at First Referral Level." Report of a Technical Working Group, Geneva.

Winikoff, B. 1983. "The Effects of Birth Spacing on Child and Maternal Health." Studies in Family Planning 14 (10).

Wolfe, B., and J. Behrman. 1983. "Is Income Overrated in Determining Adequate Nutrition?" Economic Development and Cultural Change. 31 (3).

World Bank. 1975. "The Invisible Woman." Washington, D.C.

World Bank. 1980. World Development Report. Oxford University Press, New York.

World Bank. 1983. "Bangladesh: Selected Issues in Rural Employment." Report No. 4292. Washington, D.C.

World Bank. 1984. World Development Report. Oxford University Press, New York.

World Bank. 1986. Population Growth and Policies in Sub-Saharan Africa. A World Bank Policy Study, Washington, D.C.

World Bank. 1987. "Bangladesh: Promoting Higher Growth and Human Development." Report No. 6616, Washington, D.C.

World Bank. 1988. "World Development Indicators." World Development Report 1988. Oxford University Press, New York.

World Bank OED. 1987. "The Jengke Triangle Projects in Malaysia." An Operations Evaluation Study. Washington, D.C.

World Bank OED. 1988. "Cotton Development Programs in Burkina Faso, Cote d'Ivoire and Togo." An Operators Evaluation Study. Washington, D.C.

World Bank. 1989a. "Kenya: The Role of Women in Economic Development." Washington, D.C.

World Bank. 1989b. "India: Poverty and Gender." Yellow Cover Draft, Washington, D.C. (Restricted).

World Bank. 1989c. "Pakistan: The Role of Women in Economic Development." White Cover Draft. Washington D.C. (Restricted).

Youssef, N.H. and C.B. Hetler. 1983. "Establishing the Economic Condition of Women-Headed Households in the Third World: A New Approach." In Buvinic and others, eds. Women and Poverty in the Thirld World. Baltimore: Johns Hopkins University Press.

Annex 1. ASSEMBLING EVIDENCE: STATISTICAL INDICATORS AND RESEARCH ON WID

1. To analyze the situation of women and identify ways to increase their contribution to development, it is important to distinguish problems of gender from problems of poverty or deprivation. To improve their productivity and income, poor men and women have essentially the same needs - but women may face gender-based constraints that leave them at a disadvantage. The question is how to identify those constraints, how to assess the "cost" they impose in productivity or welfare foregone, and how to find ways to relieve them (and estimate the costs and potential benefits of doing so). Essentially, this requires collecting and analyzing gender-specific measures of and research or program experience on:

i) women's and men's income and economic contribution in various sectors;

ii) any differential effects on men and women of policy incentives;

iii) the constraints men and women face in access to information and technology; inputs and credit; and markets;

iv) gender differences in human capital education and training, health and family planning;

v) gender differences in need for or impact of infrastructure;

vi) basic information on women's and men's position in the family and society (including legal structure).

2. It bears emphasizing that information just on men or just on women will not do the job - one needs both to compare and draw inferences on the special need of women, on their differential capacity to respond (or interest in responding) to economic incentives. Unfortunately, gender-specific data and rigorous empirical research are not readily available on many of these things. But a start can usually be made, enough to suggest operational approaches.

3. First, it is important to assemble statistical indicators or "stylized facts" to identify who the men and women are, where they are, what work they do, and how well or poorly they are equipped to do it. (In some cases, it is also important to find out whey they are doing "it" rather than some other kinds of work.) There is usually enough data to begin to answer these questions. Data identifying the position of women in the economy (what they do and how their functional roles are linked - with each other, with men, with resources, with markets) will suggest the degree to which women are disadvantaged. Women may be over represented among those in poverty; employment and job levels; or women's agricultural output and incomes per acre may be lower.

Economic Indicators

4. Ideally, employment information disaggregated by gender should include:

i) numbers and percent of population engaged in agriculture

- representing which members of which households;
- indicating which women are *de facto* heads of smallholder households due to male migration, divorce or abandonment;
- doing which tasks for which crops and with which assets and remuneration - as landowners or laborers;
- controlling which assets and means of production;
- earning and controlling what income from what sources.

ii) numbers and percent of population engaged in formal sectors (government, industry, trade, services, etc.)

- representing which members of which households;
- working in which sectors;
- doing which tasks (in management or employee positions);
- controlling which assets and means of production;
- earning and controlling how much income.

iii) numbers and percent of population engaged in informal sector activities

- representing which members of which households;
- urban vs. rural areas;
- indicating breakdown by main activities (manufacturing/trade/services);
- doing which jobs - as entrepreneurs or laborers;
- controlling which assets and means of production;
- earning and controlling how much income;
- household-based or enterprise-based.

iv)
- home-based work not usually included in GNP (including water and fuelwood gathering) done by both household members;
- requiring how much time.

Human Capital Indicators

5. To the extent possible, data on human resources should be reported not merely in aggregates and averages, but disaggregated by gender. Ideally, data aggregated by gender should cover:

i) education
- numeracy and literacy rates;
- educational attainment by age;
- enrollment numbers, rates and trends in primary, secondary, tertiary and vocational levels;
- school performance;
- student/teacher ratios;

ii) demographic characteristics
- age at marriage;
- fertility measures such as total fertility rate;
- contraceptive prevalence rates and numbers of acceptors by family planning method, education, and rural/urban split;
- sex ratios by age group;

iii) health
- life expectancy at birth;
- general mortality and morbidity measures;
- access to health and family planning facilities - percent of population living with a certain distance (equivalent to, say, a half day's travel for the return trip) of a facility;
- births attended by trained health personnel and maternal mortality rates;
- infant and child mortality rates;

iv) nutrition
- measures of weight for height for boys and girls;
- incidence of malnutrition (stunting/ wastage);
- low birth weight babies;
- percentage of calorie requirements satisfied in average diet.

Poverty Indicators

6. In addition to basic economic and human resource measures, poverty indicators should include measures of absolute and relative poverty:

- what percent of the poor are women;
- which groups of women; urban/rural, marital status, age education status, nutritional status;
- what percent of poor households are headed by women;
- which women live in poverty even in households with income above the poverty line;
- number of income earners per child (specifying female-headed households).

Data Considerations

7. Obtaining the data and information profile outlined in the preceding sections will be dependent on data availability. Data sources should be evaluated, as always, for coverage, completeness and quality. Are women's activities accurately reflected and quantified or, perhaps due to the sampling methodology and definitions used, do the data understate women's economic participation? In some countries, social and cultural attitudes restrict women's public activities, so that women are likely to be less visible in the economy despite an often large "work" contribution; there, an extra effort must be made to document women's roles, activities and contributions.

8. Often, women's reported labor force participation and productive employment rates will be unduly low - for reasons which may vary by country or culture. This is most likely to be true for the rural areas of low income countries, where the distinction between home subsistence production, part-time production for the market, and unpaid family work may be unclear. Some male household heads may prefer to tell enumerators that the women in their households do not work. Enumerators may classify certain work arbitrarily, or in accord with official standards, as non-work (e.g. only cash compensated employment may be defined as "work"). Women themselves, regardless of the range of their activities, may consider their primary responsibility to be that of homemaker; unless probed about the nature of their activities in further detail, they will answer as such leaving themselves out of the labor force. Depending on the timing of the enumerator's visit and the nature of the survey questions, large periods of seasonal work may be overlooked; this is more likely to be an issue for women than men, as a greater proportion of women are in non-market subsistence agriculture and market work is more seasonal.

9. Finally, a definitional concern may emerge. Many of the traditional "women's tasks" - such as water and fuel collection, often requiring several hours per day of arduous work - would be counted in the service sector of GDP if delivered via the formal physical infrastructure or through trade channels. The fact that women's labor is available to their families without remuneration and that these tasks are undertaken only by women (and children) has allowed such tasks to be omitted from formal definitions of work for the purposes of labor force participation estimates, national income accounting, and other statistical measures.

10. Having evaluated available data sources to ascertain their biases and weaknesses from a gender perspective, and if quantitative gender-disaggregated data is not available, the next step is to seek alternative information that may provide at least a qualitative indication of the nature and extent of women's activities. This information may be found in provincial or regional surveys and studies, other case study data, or such alternative sources as observation, interview, or sample survey.

11. For reasons of international convention and data comparability, Bank economists may choose not to adjust labor force participation figures to reflect some categories of women's work. But the emphasis here is rather that it remains vital to analytical accuracy that the tasks undertaken by women and the hours spent executing them be properly understood; only then can the opportunity cost of women's labor in different activities be evaluated.

As in many parts of the world, low reported rates of women's participation in the Latin American labor force may reflect the failure of censuses and surveys to count the activities of women in subsistence agriculture and urban informal sector jobs. As a result, caution must be exercised in interpreting differences among countries, as the discrepancies may reflect more the varying procedures of measuring economic activity than real differences in women's economic behavior.

Chart 8.

Labor Force Participation Rates for Women and Men Age 10 Years and Over

Part 1. Latin America and the Caribbean

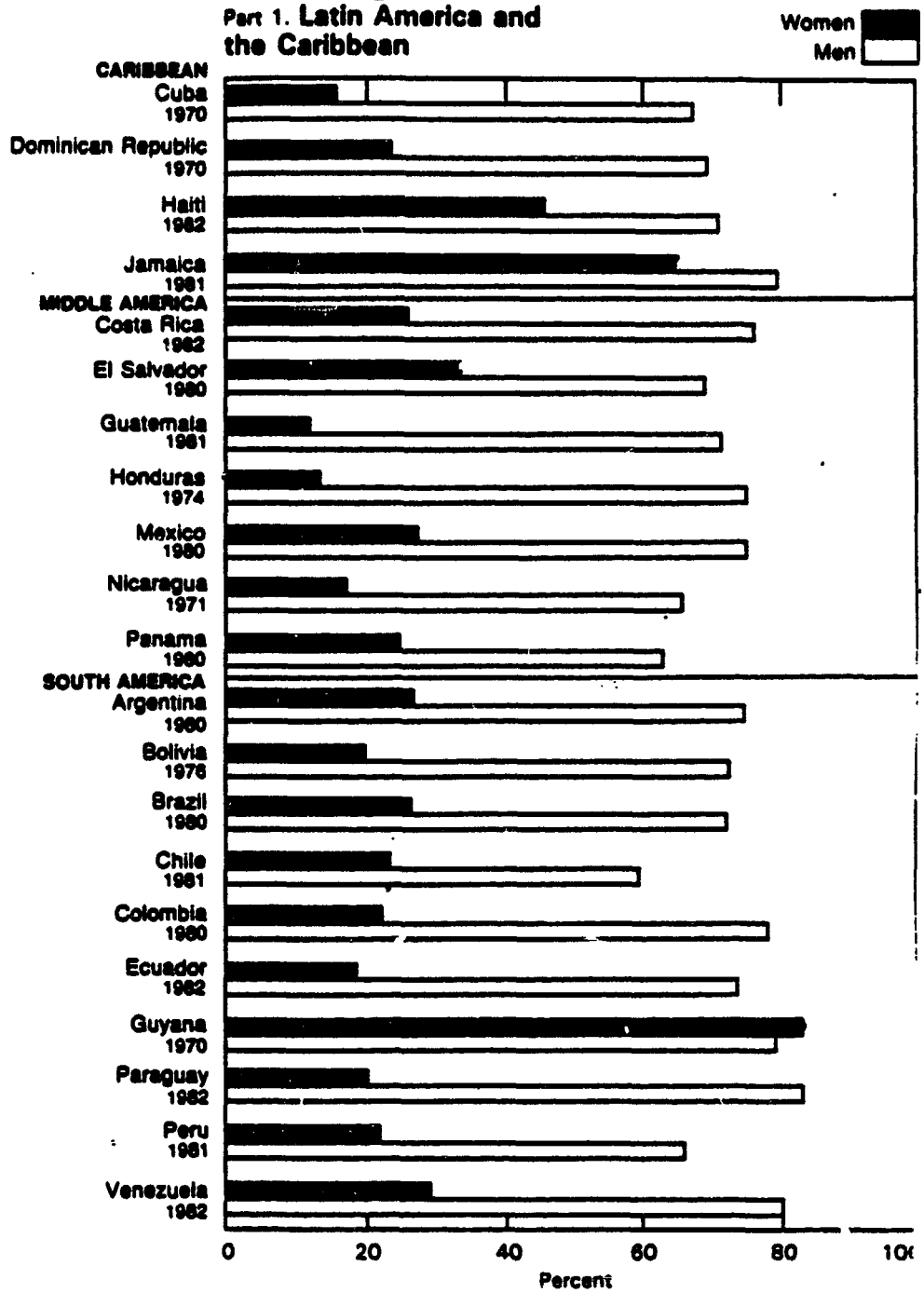


Chart 8.

Labor Force Participation Rates for Women and Men Age 10 Years and Over

Part 2. Sub-Saharan Africa

As in other developing regions, reported economic activity rates for women in Sub-Saharan Africa are usually much lower than those reported for men. In a few countries, women's rates appear to be extraordinarily high. This great variability in activity rates may be attributable more to differing labor force enumeration procedures in the censuses and surveys of African countries than to real differences in women's activity.

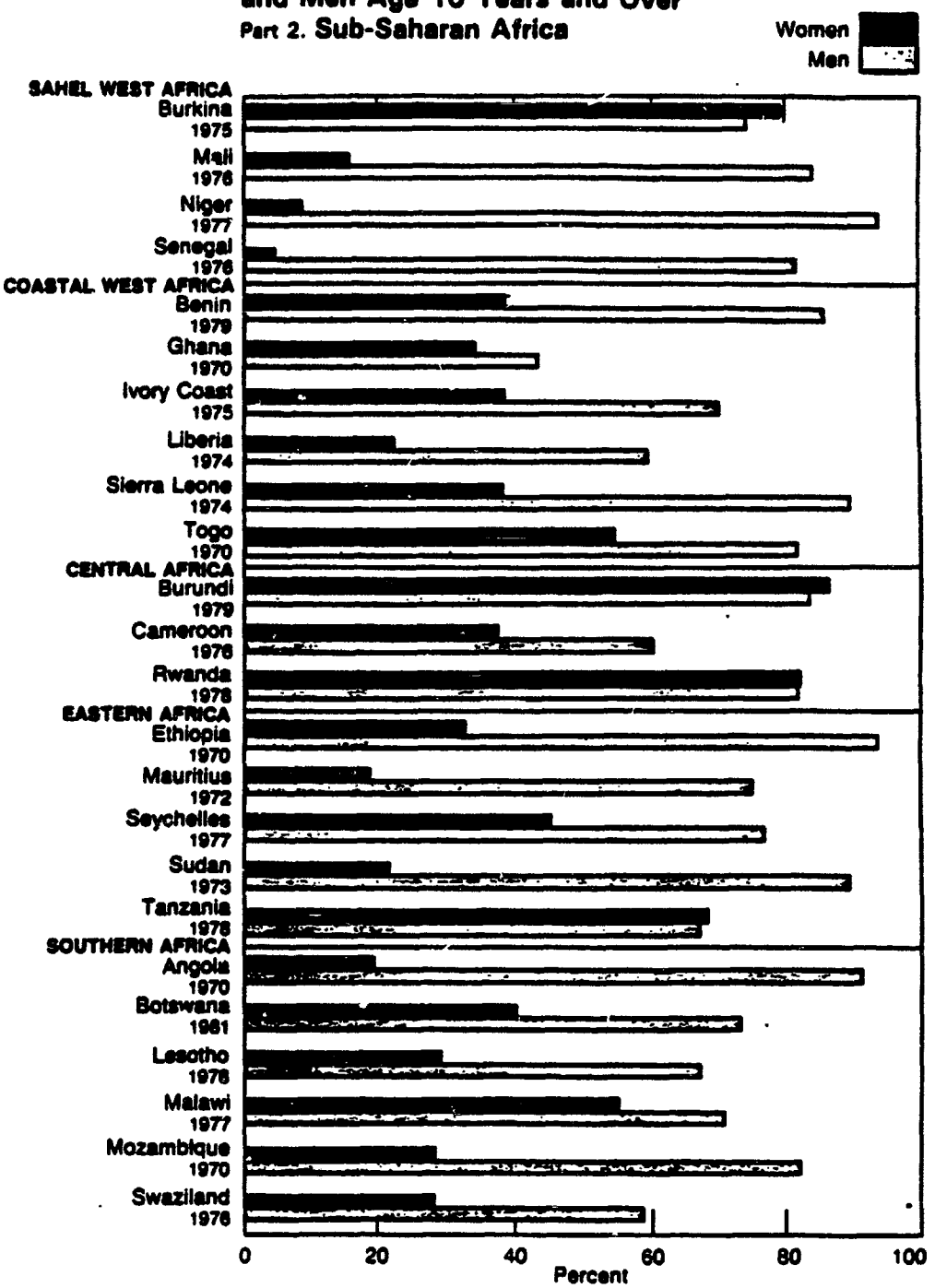


Chart 8.

Labor Force Participation Rates for Women and Men Age 10 Years and Over

Part 3. Near East and North Africa

In most of the countries of the Near East and North Africa, only a small proportion of women are reported to be economically active, as opposed to the typically high rates for men. As in other developing regions, a large part of the difference may be attributable to labor force concepts and enumeration procedures that exclude many of the activities that women are involved in. With one exception in Western South Asia, women's reported labor force participation in this region is among the lowest in the world.

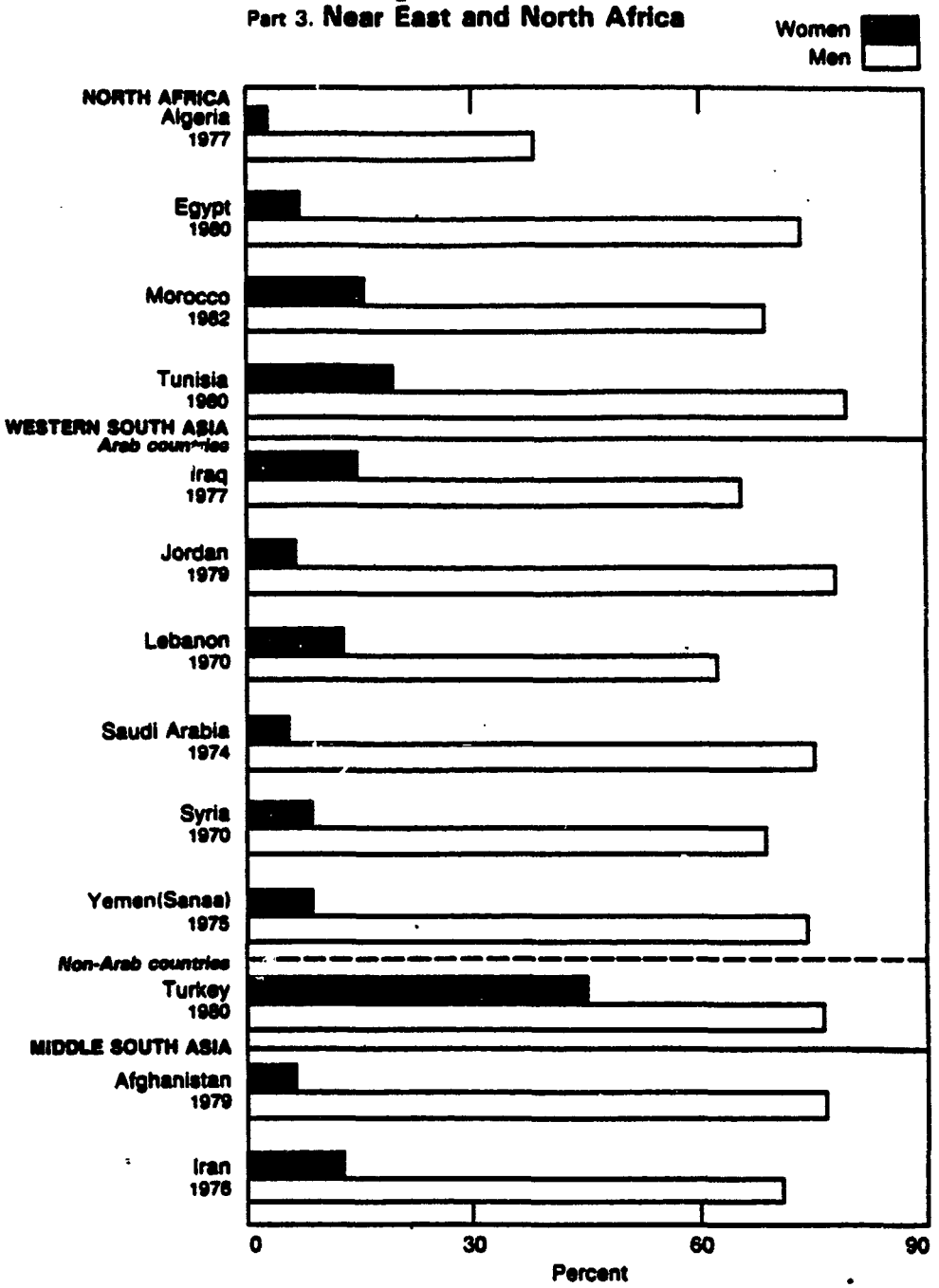


Chart 8.

Labor Force Participation Rates for Women and Men Age 10 Years and Over

Part 4. Asia

As in other developing regions, norms in Asian countries often do not promote the reporting of women's work as constituting a formal part of the labor force, and the resulting statistics show a large discrepancy between female and male participation rates.

These rates are especially low for women in Middle South Asia. In East Asia and Eastern South Asia, women's reported labor force activity reaches much higher levels but remains far below the rates for men.

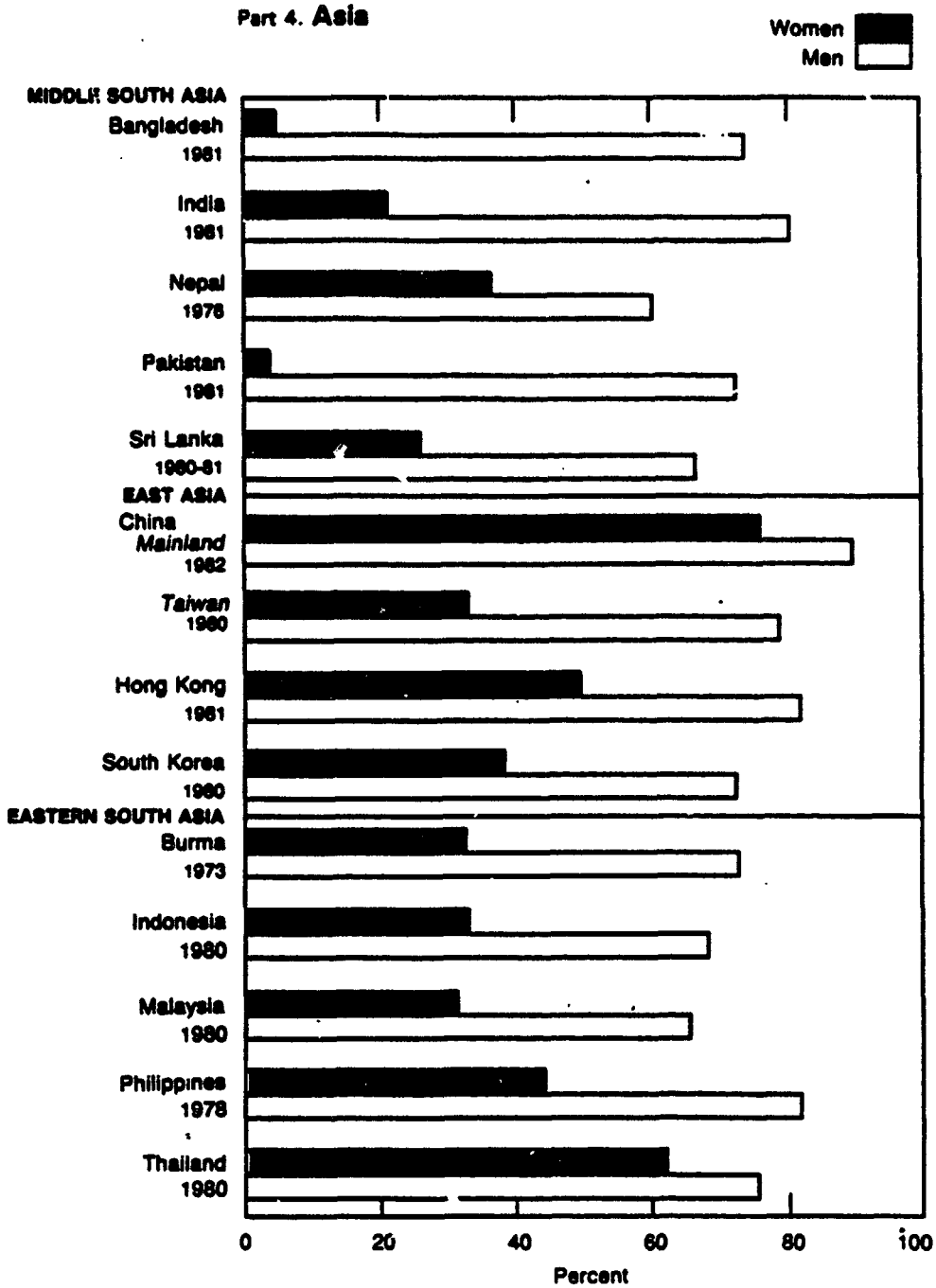


Chart 9.

Women's and Men's Share of Labor Force Age 10 Years and Over

Part 1. Latin America and the Caribbean

When women's reported economic activity is viewed as a proportion of the total labor force, the female share falls between 20 and 30 percent in a majority of Latin American countries.

In parts of the Caribbean, definitions of women's activities are more comprehensive, and women's reported share of the labor force is much larger.

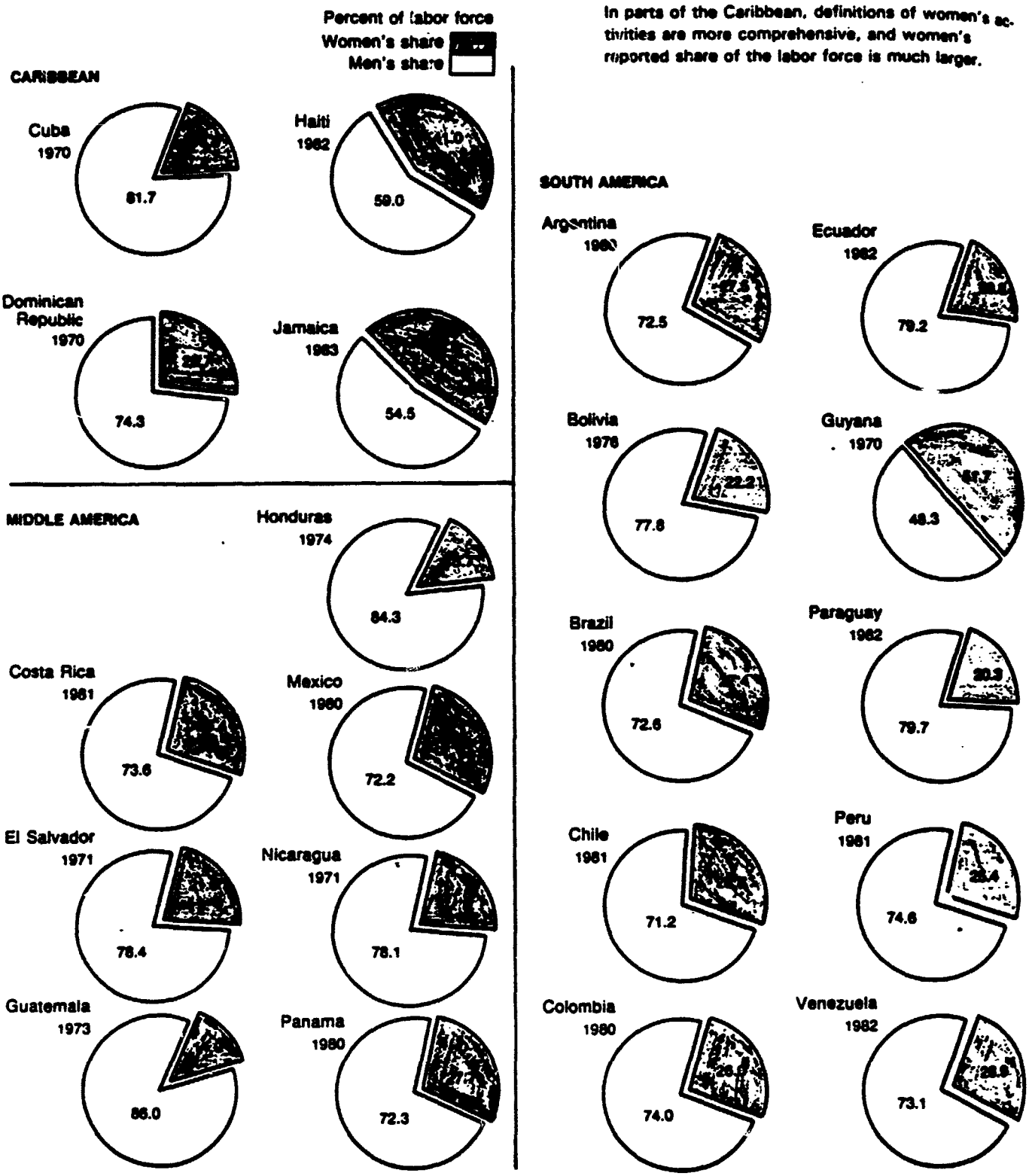
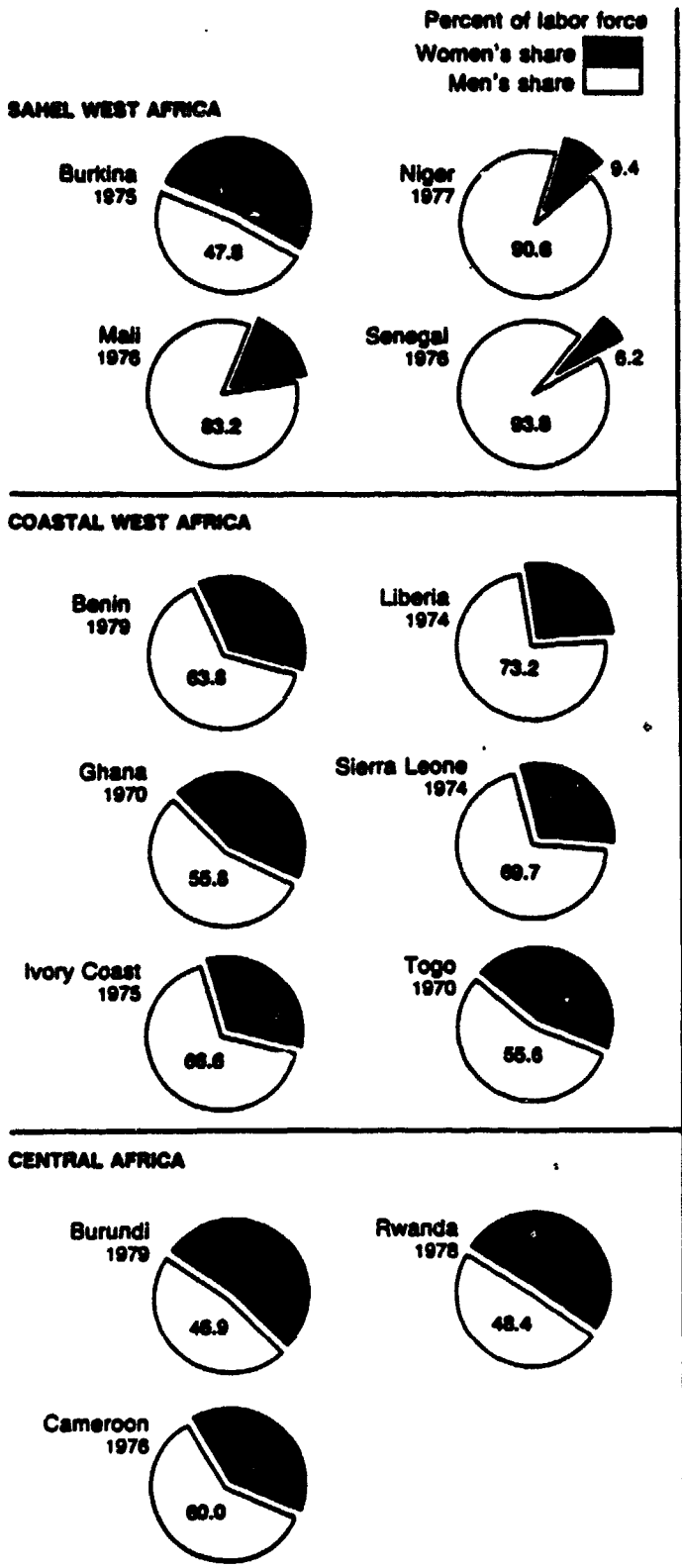


Chart 9.

Women's and Men's Share of Labor Force Age 10 Years and Over

Part 2. Sub-Saharan Africa



Women's share of the labor force appears to be highly variable among the countries of Sub-Saharan Africa. Although the countries do differ from one another in a number of respects, it is highly probable that a large part of the variation results from differing procedures in deciding just who is to be included in the concept of labor force. Some of the factors that cause the variation are differences in the ages of persons for whom data are gathered and how unpaid family workers are classified.

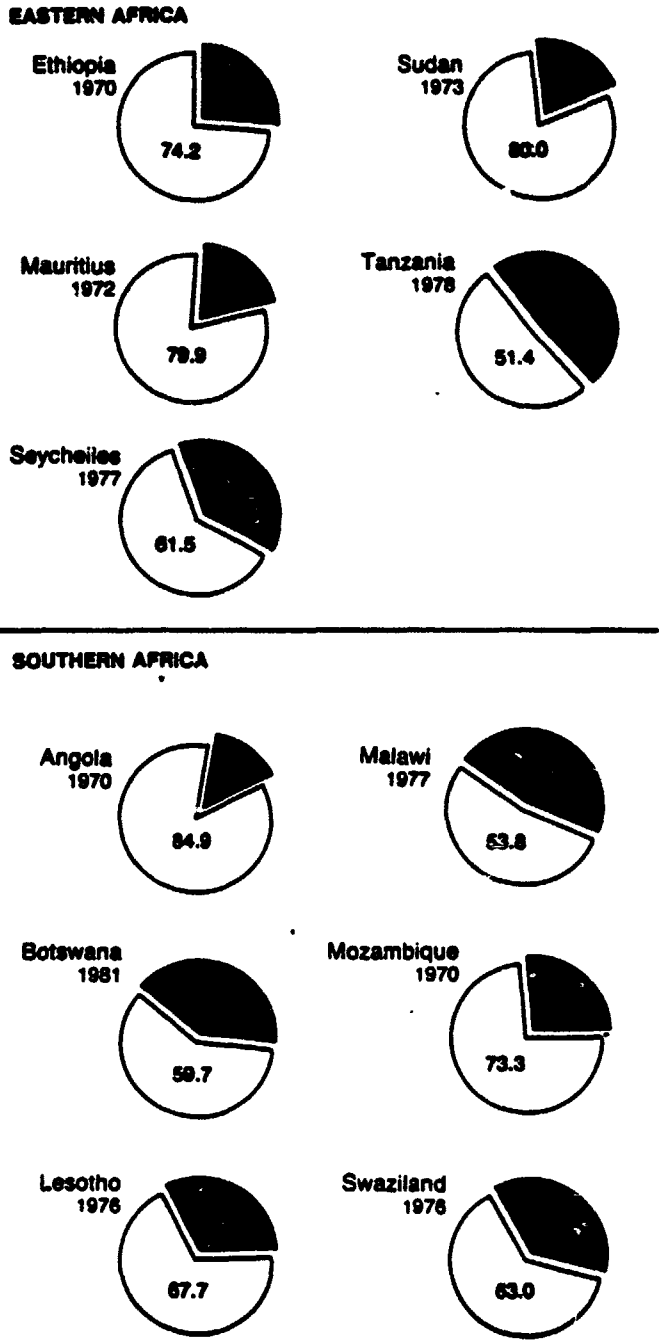


Chart 9.

Women's and Men's Share of Labor Force Age 10 Years and Over

Part 3. Near East and North Africa

In line with the generally low reported labor force participation rates of women in the Near East and North Africa, women's share of the total labor force is shown to be minimal in most of the countries. A revision of labor force concepts to include more of women's agricultural activities would undoubtedly result in a changed picture, with women's share becoming substantially larger than the present data indicate.

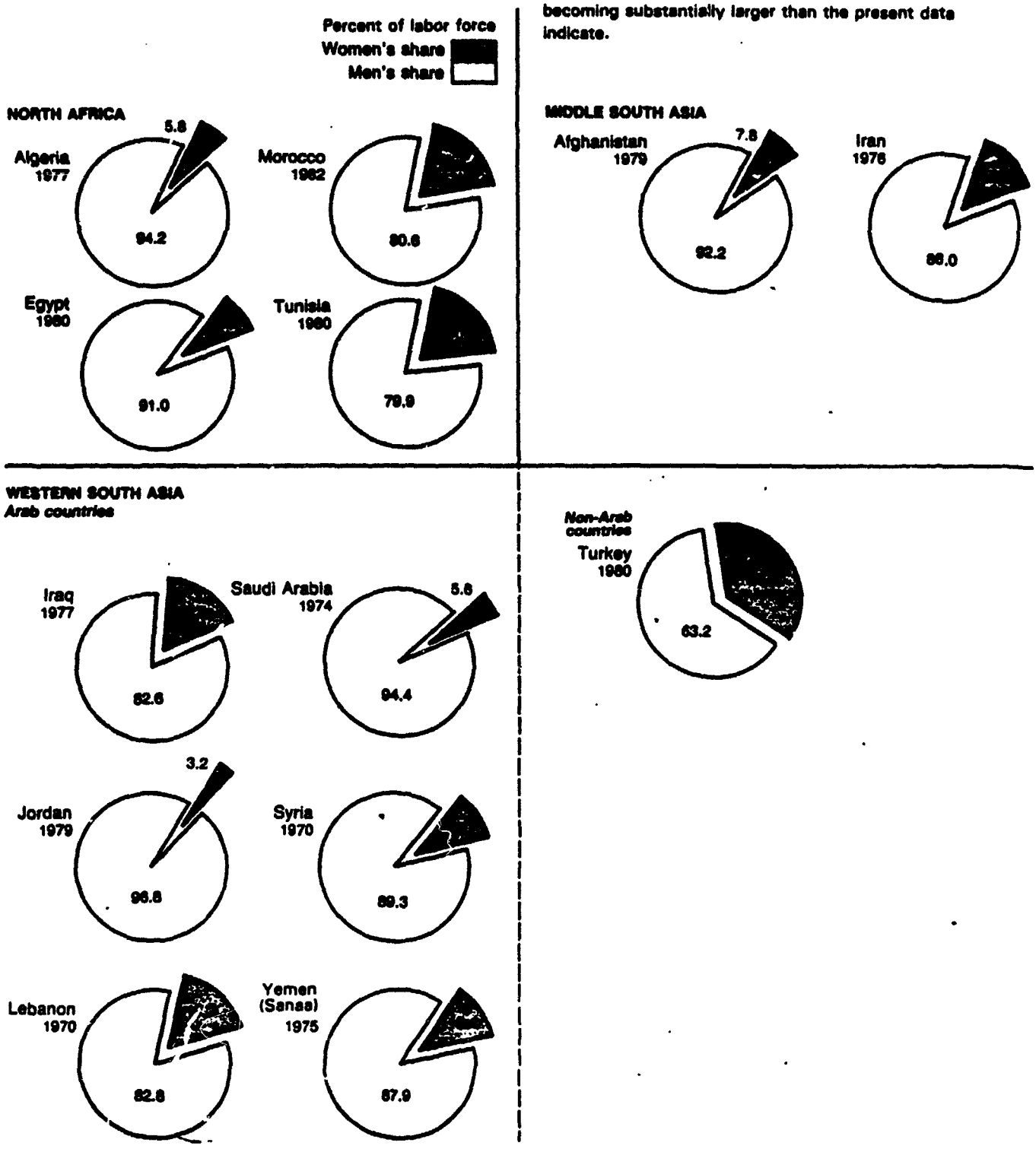
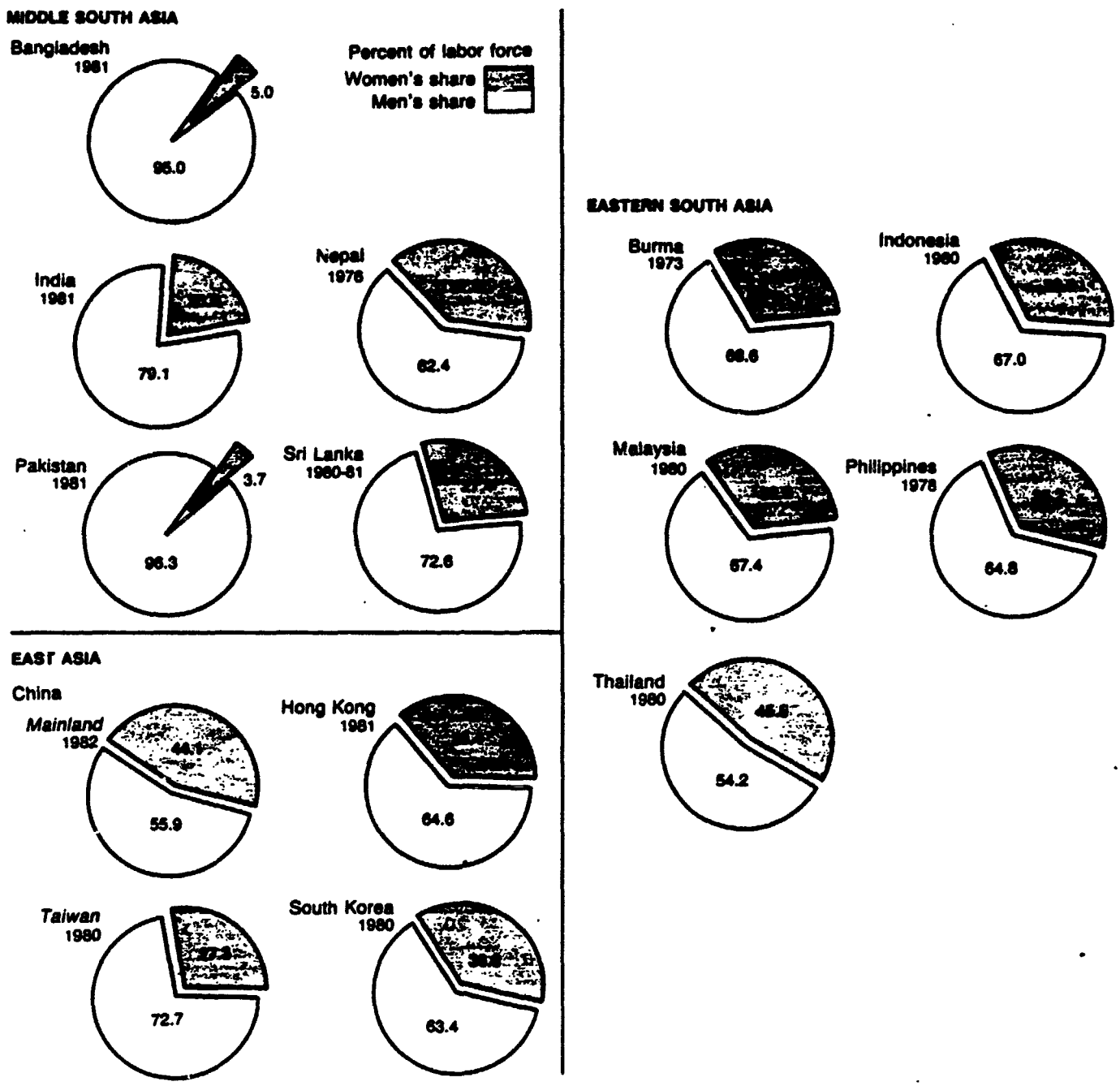


Chart 9.

Women's and Men's Share of Labor Force Age 10 Years and Over

Part 4. Asia

When women's reported economic activity is seen as a share of the total labor force, there is a large range of variation among the Asian countries, from a scant 4 to 5 percent of the labor force in parts of Middle South Asia to a more substantial third of the labor force in several Eastern South Asian countries. In one instance, women comprise nearly half of the total labor force.



(Continued from page 1)
presented for each topic even though this sometimes means presenting data for different dates for a given country from one chart to the next.

Statistics upon which these charts are based have been screened for quality, and only those judged to be reliable have been included. Nevertheless, there are often differences from one country to another in the precise concepts measured by the censuses and surveys, and no attempt has been made to standardize the data for such discrepancies. Concepts are discussed in detail in the four regional reports in the *Women of the World* series.

A large portion of the data is taken from the four earlier reports, but more recent statistics are included whenever they are available. Sources of the statistics, qualifying information, and other notes describing minor discrepancies in age groups are available in the Women in Development Data Base, the International Data Base, and other research files maintained for each country at the Center for International Research. A few qualifications to the data will be mentioned here to avoid misinterpretation. In the case of Jordan, data refer to East Bank residents only, except for the total population in chart 1, which refers to East and West Bank combined. For Afghanistan, data refer to the settled (non-nomadic) population only. In chart 2, where two census dates are presented for most countries, only one date is shown in the few cases where countries have not conducted a second recent census. In chart 6, data for Asia in the youngest age group refer to age 10 to 24 years instead of 15 to 24 years as in the other regions. In all charts, a particular country is omitted if no data are available on the topic being presented.

Data sources and related information are available by addressing specific questions to the Chief, Center for International Research, Bureau of the Census, Room 709 Scuderi Building, Washington, D.C. 20233, USA. Comments on the chartbook are also welcome.

A limited number of the first four reports in the *Women of the World* series are available free of charge for overseas distribution by writing to the Center for International Research (see address above). Users in the United States may obtain hard copy for $5.50 each or microfiche copy (price varies) from Customer Services, Data User Services Division, Bureau of the Census, Washington, D.C., 20233, U.S.A.

Definition of Terms

The concepts presented graphically in this chartbook are based on statistics taken principally from censuses and surveys conducted in the individual countries. While each country defines terms in its own way, the concepts are alike in at least a general way, as described below.

Distribution of lifetime fertility. The proportion of total fertility that occurs in each age group during a woman's reproductive years. (See total fertility rate.)

Head of household. Most censuses do not provide a precise definition of household headship. In some areas, where social norms do not yet support the idea of a female head of household, both respondents and enumerators tend to assign nominal headship to any available male.

Infant mortality rate. The number of deaths among infants under 1 year of age per 1,000 live births occurring in the same calendar year.

Labor force participation rate. The proportion of women or men of specified ages who are employed in the formal economic sector or seeking work. Some censuses or surveys differ in including or excluding particular categories of workers or in their precise definitions of economic activity. The concept of "unpaid family worker" is especially variable. Throughout the Third World, women participate actively in informal labor markets. In many instances, a large proportion of women's work in general (and women's work in the informal sector in particular) is traditionally not counted in statistics on the labor force.

Life expectancy at birth. The average number of years to be lived by persons born in a particular year if mortality at each age remains constant in the future.

Literate. A literate person is usually defined simply as one who can read and write. Some censuses add more specific criteria, such as the ability to write a statement about everyday life or the ability to read and write a particular language.

Rural/urban residence. Statistics are presented in the chartbook by rural/urban residence as defined by each individual country's census. These definitions may vary considerably according to the particular criteria of each nation.

School enrollment. Usually refers to the proportion of children of a specified age who are enrolled in school on the census date; occasionally, statistics are based on administrative records of the school system. The measure does not take into account actual attendance at school nor does it make allowance for students who enroll but later drop out.

Total fertility rate. Total lifetime fertility of the average woman in a country. Specifically, calculated as the average number of children that would be born per woman if all women lived to the end of their childbearing years and bore children according to a given set of age-specific fertility rates. (Age-specific fertility rates are the average annual number of births to women in a given age group per 1,000 women in that age group at midyear.)

Women's share of labor force. The percentage of all members of the labor force who are women.

Table 32. Women in development

		Population: females per 100 males				Health and welfare: Life expectancy at birth (years)				Births attended by health staff (percent)	Maternal mortality (per 100,000 live births)	Infant mortality (per 1,000 live births)		Education: females per 100 males			
		Total		Age 0–4		Female		Male						Primary		Secondary[a]	
		1965	1985	1965	1985	1965	1987	1965	1987	1985	1980	1965	1987	1965	1986	1970	1986
Low-income economies		96 w	96 w	96 w	94 w	49 w	62 w	47 w	60 w			124 w	76 w	..	75 w	..	60 w
China and India		94 w	94 w	94 w	94 w	51 w	65 w	48 w	64 w			114 w	62 w	..	74 w	..	60 w
Other low-income		100 w	100 w	99 w	97 w	45 w	55 w	43 w	53 w			149 w	103 w	49 w	75 w	45 w	59 w
1	Ethiopia	101	101	98	100	43	49	42	45	58	2,000[b]	166	154	38	63	32	64
2	Bhutan	98	94	9.	94	40	47	41	49	3	..	173	128	..	54	..	31
3	Chad	104	103	100	100	38	47	35	44	..	700	184	132	..	39	9	*18*
4	Zaire	107	103	97	99	45	54	42	51	..	800[b]	142	98	48	*75*	26	*40*
5	Bangladesh	92	94	98	94	44	50	45	51	..	600	145	119	44	66	..	45
6	Malawi	108	104	105	98	40	48	38	44	59	250	201	150	..	78	*39*	51
7	Nepal	98	95	100	94	40	50	41	52	10	850	173	128	..	*41*	16	*30*
8	Lao PDR	98	99	98	98	..	50	..	47	..	..	..	110	59	*81*	34	*73*
9	Mozambique	104	103	100	100	39	50	36	47	28	479[b]	180	141	..	78	..	53
10	Tanzania	104	103	101	99	44	55	41	51	74	370[b]	139	106	60	100	38	62
11	Burkina Faso	103	102	100	100	40	49	37	46	..	600	195	138	48	59	33	*47*
12	Madagascar	103	102	102	99	44	55	41	52	62	300	203	120	83	..	70	*74*
13	Mali	108	107	108	100	39	49	37	46	27	..	207	169	49	59	29	43
14	Burundi	108	105	103	99	45	51	42	47	12	..	143	112	42	75	17	52
15	Zambia	102	103	98	98	46	55	42	51	..	110	123	80	78	90	49	*58*
16	Niger	103	102	98	100	38	46	35	43	47	420[b]	181	135	46	56	35	*39*
17	Uganda	102	102	100	99	47	50	43	47	..	300	122	103	..	82	31	54
18	China	94	94	95	93	59	71	55	68	..	44	90	32	..	82	..	69
19	Somalia	102	110	101	100	40	49	36	45	2	1,100	166	132	27	52	27	*58*
20	Togo	104	103	100	99	43	55	40	51	15	476[b]	156	94	42	62	26	31
21	India	94	93	94	94	44	58	46	58	33	500	131	99	57	*64*	*40*	*48*
22	Rwanda	103	102	101	100	51	50	47	47	..	210	141	122	69	97	44	29
23	Sierra Leone	104	104	101	100	34	42	31	40	25	450	210	151	55	..	40	..
24	Benin	104	104	104	100	43	52	41	49	34	1,680[b]	168	116	44	*50*	44	41
25	Central African Rep.	109	106	105	100	41	52	40	48	..	600	169	132	34	62	20	39
26	Kenya	100	100	99	98	49	60	45	56	.	510[b]	113	72	57	*93*	42	*62*
27	Sudan	100	99	98	97	41	51	39	49	20	607[b]	161	108	55	*68*	40	*76*
28	Pakistan	93	91	96	95	44	54	47	55	24	600	150	109	31	50	25	38
29	Haiti	105	104	98	98	46	56	44	53	20	340	180	117	..	*87*	..	*88*
30	Lesotho	111	108	102	102	50	57	47	54	28	..	143	100	157	*125*	111	*150*
31	Nigeria	103	102	100	99	43	53	40	49	..	1,500	179	105	63	*79*	51	..
32	Ghana	102	102	100	99	49	56	46	52	73	1,070[b]	121	90	71	*77*	36	*62*
33	Sri Lanka	93	98	97	96	64	73	63	68	87	90	63	33	86	93	101	109
34	Yemen, PDR	98	103	97	97	40	52	39	49	10	100	197	120	..	*36*	25	*48*
35	Mauritania	103	103	101	100	39	48	35	44	23	119	180	127	31	66	13	41
36	Indonesia	102	101	101	97	45	62	43	58	43	800	129	71	..	93	*64*	*73*
37	Liberia	99	97	100	99	45	56	42	53	..	173	139	87	..	..	30	..
38	*Afghanistan*	95	..	96	..	35	..	35	..	..	640	207	..	17	50	16	49
39	*Burma*	100	101	98	97	49	62	46	58	..	140	125	70	..	..	65	..
40	*Guinea*	101	102	101	100	36	44	34	41	..	..	197	147	..	44	*30*	33
41	*Kampuchea*	100	..	98	..	46	..	43	..	..	..	135	..	56	..	..	..
42	*Viet Nam*	..	105	..	97	..	68	..	64	100	110	..	46	..	*91*	..	*90*
Middle-income economies		100 w	100 w	97 w	96 w	59 w	67 w	55 w	62 w			99 w	56 w	78 w	88 w	88 w	96 w
Lower-middle-income		100 w	100 w	97 w	96 w	57 w	66 w	53 w	61 w			108 w	61 w	76 w	88 w	83 w	99 w
43	Senegal	102	102	101	100	42	49	40	46	..	530[c]	172	128	57	*68*	39	*50*
44	Bolivia	102	103	99	98	46	55	42	51	36	480	161	110	68	88	64	86
45	Zimbabwe	101	102	100	100	49	60	46	56	69	150[b]	104	72	..	95	63	68
46	Philippines	99	99	97	95	57	65	54	62	..	80	73	45	94	94	..	99
47	Yemen Arab Rep.	97	111	97	97	40	52	39	50	12	..	197	116	5	27	3	12
48	Morocco	100	100	98	96	51	63	48	59	..	327[b]	147	82	42	62	40	67
49	Egypt, Arab Rep.	98	97	95	95	50	62	47	59	24	500	173	85	64	77	45	..
50	Papua New Guinea	91	92	94	95	44	55	44	53	34	1,000	143	62	61	..	..	..
51	Dominican Rep.	97	97	97	97	57	68	54	64	57	56	111	65	..	96	..	*122*
52	Côte d'Ivoire	100	97	100	99	43	54	40	51	20	..	150	96	51	*70*	27	*41*
53	Honduras	99	98	97	96	51	66	48	62	50	82	130	69	..	100	..	..
54	Nicaragua	101	100	98	96	51	65	49	62	..	65	123	62	99	107	..	172
55	Thailand	100	99	96	96	58	66	53	63	33	270	90	39	89	..	69	..
56	El Salvador	99	103	97	96	56	67	52	58	35	74	122	59	91	*99*	77	*94*
57	Congo, Peoples Rep.	104	103	101	99	51	61	48	57	..	..	121	73	71	90	43	75
58	Jamaica	109	102	100	97	67	77	63	71	89	100	50	18	..	97	*111*	105
59	Guatemala	97	98	97	96	50	64	48	60	19	110	114	59	80	82	82	..
60	Cameroon	105	103	100	99	47	58	44	54	..	303	145	94	66	84	36	62
61	Paraguay	100	98	96	96	67	69	63	65	22	469	74	42	88	92	91	98
62	Ecuador	100	99	97	97	57	68	54	63	27	220	113	63	91	*97*	76	*100*
63	Botswana	122	110	103	100	49	62	46	56	52	300	113	67	129	108	..	111
64	Tunisia	96	98	96	95	51	66	50	65	60	1,000[c]	147	59	52	80	*44*	71
65	Turkey	96	94	97	97	55	66	52	63	78	207	165	76	66	89	37	59
66	Colombia	101	99	97	97	59	68	53	64	51	130	99	46	102	130	95	100
67	Chile	102	103	98	97	62	75	56	68	..	55	103	20	96	95	130	108

Note: For data comparability and coverage, see the technical notes. Figures in italics are for years other than those specified.

		Population: females per 100 males				Health and welfare: Life expectancy at birth (years)				Births attended by health staff (percent)	Maternal mortality (per 100,000 live births)	Infant mortality (per 1,000 live births)		Education: females per 100 males			
		Total		Age 0–4		Female		Male						Primary		Secondary[a]	
		1965	1985	1965	1985	1965	1987	1965	1987	1985	1980	1965	1987	1965	1986	1970	1986
68	Peru	98	98	97	96	52	63	49	60	55	310	131	88	82	93	74	*88*
69	Mauritius	100	102	96	97	63	70	59	63	90	99	64	23	90	97	66	90
70	Jordan	94	94	96	96	51	68	49	64	75	..	114	44	72	*91*	53	96
71	Costa Rica	98	98	97	96	66	76	63	71	93	26	72	18	..	94	111	106
72	Syrian Arab Rep.	95	97	94	97	54	67	51	63	37	280	116	48	47	86	36	69
73	Malaysia	97	99	96	95	59	72	56	68	82	59	57	24	..	*94*	..	*98*
74	Mexico	100	100	96	96	61	72	58	65	..	92	82	47	..	95	..	88
75	South Africa	100	101	96	98	53	64	49	58	..	550[c]	125	72	..	..	..	..
76	Poland	106	105	95	95	72	76	66	68	..	12	42	18	..	*94*	251	265
77	*Lebanon*	99	..	96	..	64	..	60	..	..	..	57	..	..	..	*77*	..
	Upper-middle-income	**101 w**	**100 w**	**96 w**	**96 w**	**61 w**	**69 w**	**58 w**	**64 w**			**88 w**	**50 w**	**82 w**	..	**92 w**	..
78	Brazil	100	100	98	98	59	68	55	62	73	150	105	63	..	..	99	..
79	Uruguay	100	103	96	97	72	74	64	68	..	56	48	27	..	95	129	..
80	Hungary	107	107	94	96	72	74	67	67	99	28	39	17	94	95	202	187
81	Panama	96	96	96	96	64	74	62	70	83	90	58	23	93	92	102	109
82	Argentina	98	102	97	97	69	74	63	67	..	85	58	32	97	..	156	..
83	Yugoslavia	104	102	95	94	68	75	64	68	..	27	72	25	91	93	86	92
84	Algeria	99	101	97	95	51	64	49	61	..	129	155	74	62	79	40	72
85	Korea, Rep.	100	100	93	93	58	73	55	66	65	34	64	25	91	94	65	88
86	Gabon	104	104	100	100	44	54	41	51	..	124[b]	155	103	84	99	43	81
87	Portugal	110	107	95	94	69	77	63	70	..	15	65	16	95	*91*	98	*116*
88	Venezuela	97	98	96	96	64	73	60	67	82	65	67	36	98	96	*102*	119
89	Greece	106	103	94	93	72	79	69	74	..	12	34	13	92	*94*	91	*102*
90	Trinidad and Tobago	101	100	97	97	67	73	63	67	90	81	43	20	97	99	113	*101*
91	Libya	93	90	97	96	51	63	48	59	76	80	140	82	39	..	21	..
92	Oman	98	89	97	97	44	57	42	54	60	..	197	100	..	82	*38*	*58*
93	*Iran, Islamic Rep.*	99	97	99	94	52	64	52	62	..	..	154	65	46	78	49	67
94	*Iraq*	97	96	96	95	52	65	51	63	50	..	121	69	42	81	41	59
95	*Romania*	104	103	95	95	70	73	66	68	..	180	44	25	94	..	..	..
	Low- and middle-income	**97 w**	**97 w**	**96 w**	**95 w**	**52 w**	**63 w**	**49 w**	**61 w**			**118 w**	**71 w**	..	**77 w**	..	**67 w**
	Sub-Saharan Africa	**103 w**	**102 w**	**100 w**	**99 w**	**44 w**	**52 w**	**41 w**	**49 w**			**160 w**	**115 w**	**56 w**	**76 w**	**40 w**	**56 w**
	East Asia	**96 w**	**96 w**	**95 w**	**94 w**	**54 w**	**69 w**	**50 w**	**66 w**			**93 w**	**40 w**	..	**85 w**	..	**72 w**
	South Asia	**94 w**	**94 w**	**95 w**	**94 w**	**45 w**	**57 w**	**46 w**	**57 w**			**147 w**	**102 w**	**54 w**	**63 w**	**40 w**	**47 w**
	Europe, M.East, & N.Africa	**101 w**	**99 w**	**96 w**	**95 w**	**59 w**	**66 w**	**56 w**	**62 w**			**115 w**	**65 w**	**65 w**	**80 w**	**81 w**	**97 w**
	Latin America & Caribbean	**100 w**	**100 w**	**97 w**	**97 w**	**60 w**	**69 w**	**56 w**	**63 w**			**95 w**	**56 w**	..	..	**103 w**	..
	17 highly indebted	**100 w**	**100 w**	**98 w**	**97 w**	**57 w**	**65 w**	**53 w**	**60 w**			**107 w**	**64 w**	**80 w**	**88 w**	**87 w**	**92 w**
	High-income economies	**104 w**	**104 w**	**96 w**	**95 w**	**74 w**	**79 w**	**67 w**	**73 w**			**25 w**	**10 w**	..	**94 w**	..	**99 w**
	OECD members	**104 w**	**105 w**	**96 w**	**95 w**	**74 w**	**79 w**	**68 w**	**73 w**			**24 w**	**9 w**	..	**95 w**	..	**99 w**
	†Other	**95 w**	**87 w**	**96 w**	**95 w**	**63 w**	**72 w**	**59 w**	**65 w**			**72 w**	**38 w**	..	**88 w**	**68 w**	**92 w**
96	Spain	106	104	96	94	74	80	68	74	96	10	38	10	93	94	..	102
97	Ireland	99	99	96	94	73	76	69	71	..	7	25	7	..	*95*	..	*101*
98	†Saudi Arabia	96	84	97	97	49	65	47	62	78	52	150	71	29	80	16	*70*
99	†Israel	98	100	95	94	73	77	70	74	99	5	27	12	..	97	*133*	122
100	New Zealand	99	102	95	95	74	78	68	72	99	14	20	11	94	95	..	98
101	†Singapore	94	96	95	93	68	76	63	70	100	11	26	9	85	*89*	103	*102*
102	†Hong Kong	97	95	95	92	71	79	64	73	..	4	28	8	..	*91*	74	*105*
103	Italy	104	106	95	95	73	80	68	74	..	13	36	10	93	95	86	95
104	United Kingdom	106	105	95	95	74	78	68	72	98	7	20	9	..	..	..	..
105	Australia	98	100	95	95	74	80	68	73	99	11	19	10	95	94	..	98
106	Belgium	104	105	95	95	74	78	68	72	100	10	24	10	94	96	..	96
107	Netherlands	100	102	95	96	76	80	71	74	..	5	14	8	95	*98*	91	112
108	Austria	114	110	96	94	73	78	66	71	..	11	28	10	95	94	95	93
109	France	105	105	96	95	75	80	68	74	..	13	22	8	95	94	..	110
110	Germany, Fed. Rep.	111	109	95	95	73	78	67	72	..	11	24	8	94	96	92	98
111	Finland	107	107	96	96	73	79	66	72	..	5	17	7	..	95	..	113
112	†Kuwait	64	76	97	98	64	75	61	71	99	18	66	19	76	95	73	*89*
113	Denmark	102	103	95	96	75	78	71	73	..	4	19	8	96	96	102	105
114	Canada	99	102	95	94	75	80	69	73	99	2	24	8	94	93	95	95
115	Sweden	100	102	95	95	76	80	72	73	100	4	13	6	96	95	..	*107*
116	Japan	104	103	96	95	73	81	68	75	100	15	18	6	96	95	*101*	99
117	†United Arab Emirates	72	46	96	96	59	73	55	69	96	..	108	26	..	94	*52*	97
118	Norway	101	102	95	95	76	80	71	74	100	4	17	8	..	96	97	103
119	United States	103	105	96	95	74	79	67	72	100	9	25	10	..	94	..	97
120	Switzerland	105	105	96	95	75	80	69	74	..	5	18	7	..	97	..	99
	Total reporting economies	**99 w**	**98 w**	**96 w**	**95 w**	**56 w**	**66 w**	**53 w**	**63 w**			**98 w**	**60 w**	..	**80 w**	..	**73 w**
	Oil exporters	**101 w**	**99 w**	**98 w**	**97 w**	**50 w**	**62 w**	**48 w**	**58 w**			**134 w**	**75 w**	..	**87 w**	**56 w**	**77 w**
	Nonreporting nonmembers	**116 w**	**111 w**	**96 w**	**96 w**	**72 w**	**73 w**	**64 w**	**65 w**			**33 w**	**27 w**	..	..	..	..

a. See the technical notes. b. Data refer to maternal mortality in hospitals and other medical institutions only. c. Community data from rural areas only.

Source: 1989 WDR

PPR Working Paper Series

	Title	Author	Date	Contact for paper
WPS251	Patents, Appropriate Technology, and North-South Trade	Ishac Diwan Dani Rodrik	August 1989	S. King-Watson 33730
WPS252	Do the Secondary Markets Believe in Life After Debt	V. A. Hajivassiliou	August 1989	S. King-Watson 33730
WPS253	Public Debt, North and South	Helmut Reisen	August 1989	S. King-Watson 33730
WPS254	Future Financing Needs of the Highly Indebted Countries	Ishrat Husain Saumya Mitra	August 1989	S. King-Watson 33730
WPS255	The External Debt Difficulties of Low Income Africa	Charles Humphreys John Underwood	August 1989	S. King-Watson 33730
WPS256	Cash Debt Buybacks and the Insurance Value of Reserves	Sweder van Wijnbergen		
WPS257	Growth, External Debt , and the Real Exchange Rate in Mexico	Sweder van Wijnbergen	August 1989	M. Bailey 31854
WPS258	The Role of Voluntary Organizations in Development	L. David Brown David C. Korten		
WPS259	Dealing with Debt: The 1930s and the 1980s	Barry Eichengreen Richard Portes	August 1989	S. King-Watson 33730
WPS260	Growth, Debt, and Sovereign Risk in a Small, Open Economy	Jagdeep S. Bhandari Nadeem Ul Haque Stephen J. Turnovsky	August 1989	R. Luz 61588
WPS261	Inflation, External Debt and Financial Sector Reform: A Quantitative Approach to Consistent Fiscal Policy	Sweder van Wijnbergen Roberto Rocha Ritu Anand		
WPS262	Adjustment and External Shocks in Ireland	Dermot McAleese F. Desmond McCarthy	August 1989	M. Divino 33739
WPS263	How Has Instability in World Markets Affected Agricultural Export Producers in Developing Countries	Peter Hazell Mauricio Jaramillo Amy Williamson	August 1989	C. Spooner 30464
WPS264	Case Studies of Two Irrigation Systems in Colombia: Their Performance and Transfer of Management to Users' Associations	Herve Plusquellec		
WPS265	The Influence of Imperfect Competition in International Markets: Some Empirical Evidence	Alexander Yeats		

PPR Working Paper Series

	Title	Author	Date	Contact for paper
WPS266	Policy Changes that Encourage Private Business Investment in Colombia	Mansoor Dailami	August 1989	M. Raggambi 61696
WPS267	Issues in Income Tax Reform in Developing Countries	Cheryl W. Gray		
WPS268	Shortcomings in the Market for Developing Country Debt	John Wakeman-Linn	September 1989	S. King-Watson 33730
WPS269	Women in Development: Issues for Economic and Sector Analysis	Women in Development Division	August 1989	J. Lai 33753
WPS270	Fualwood Stumpage: Considerations for Developing Country Energy Planning	Keith Openshaw Charles Feinstein		
WPS271	The Industrial Labor Market and Economic Performance in Senegal: A Study of Enterprise Ownership, Export Orientation, and Government Regulation	Katherine Terrell Jan Svejnar		
WPS272	Women's Changing Participation in the Labor Force: A World Perspective	T. Paul Schultz		
WPS273	FY88 Annual Sector Review: Population, Health and Nutrition	Population and Human Resources Department		
WPS274	The Demography of Zaire: Review of Trends in Mortality and Fertility	Miriam Schneidman		
WPS275	Revised Estimates and Projections of International Migration, 1980-2000	Fred Arnold	August 1989	S. Ainsworth 31091
WPS276	Improving Rural Wages in India	Shahidur R. Khandker	August 1989	B. Smith 35108
WPS277	The Effect of Formal Credit on Output and Employment in Rural India	Shahidur R. Khandker Hans P. Binswanger	August 1989	B. Smith 35108
WPS278	Inflation and the Company Tax Base Methods to Minimize Inflation-Induced Distortions	Anand Rajaram		
WPS279	Cross Country Determinants of Growth and Technological Change	Paul M. Romer		